

Appendix G – East Face Response to Comments

American Forests Resource Council (AFRC) Comments

AFRC1 - East Face Vegetation Management Project (East Face) has the potential to be an excellent project, providing significant social and ecological values and some economic benefit by providing various wood products to local and regional economies.

Response – *Thank you for your support of the East Face project.*

AFRC2 - Thank you for the development of Alternative 5 which maximizes acres treated with commercial harvest. This strategy will help pay for the restoration components of the project. Please modify Alternative 5 to include the maximum acres of noncommercial treatments as well. Reducing fuels and restoring forest resilience is the major driver for East Face.

Response – *Alternative 5 does treat the most acres. The reason the non-commercial acres are the lowest in Alternative 5 in the summary table 23 (EA page 61) is because where possible and appropriate, non-commercial acres were converted to commercial biomass removal treatments to provide that option to contractors interested in those types of materials. The EA states at page 41 that if there is no market for the biomass within these units, the PCT and WFH would still occur and slash treatments would be the same as those described under Alternative 2 for each unit.*

AFRC3 - Acres treated in roadless areas should be increased. After the devastating fires on the Malheur National Forest this past August, where 50 homes burned, the importance of adequately reducing extremely heavy fuel loads such as those found on East Face cannot be over emphasized. Given that East Face is a National Cohesive Wildfire Strategy pilot project with an extensive WUI into this is an excellent opportunity. The Wallowa Whitman National Forest is growing vegetation much faster than it is being treated – although wildfire is certainly working at keeping up with growth.

Response – *There are no inventoried roadless areas (IRA) within the East Face project area; therefore, there are no foregone opportunities for treatment within any IRA.*

AFRC4 - Please increase treatments in RHCAs in Alternative 5 from the 45 acres shown to the 238 acres as described under Alternatives 2 and 4. Treating RHCAs is critical from the standpoint of enhancing and increasing riparian shrubs and hardwoods and reducing extremely heavy fuel loads that too many conifers create. Fire in these systems is natural and riparian vegetation will respond very positively. However, when fuel loads are too heavy and very hot fires burn in these riparian systems soils are destabilized and extensive erosion occurs adding extremely heavy sediment loads to waters of the state.

Response – *A detailed description of the stream conditions within the East Face project area is located in the Fisheries and Watershed Existing Condition report in the East Face analysis file. In general, stream surveys within the East Face project area for fishbearing streams revealed that the streams were generally in very good condition with lush streamside shrub vegetation, adequate stream shading, and stable banks. Due to the presence of endangered bull trout and critical bull trout habitat within the project area, no mechanical treatment is proposed within RHCAs.*

RHCA treatments are proposed within 35–51 units for a total of approximately 792–991 acres (EA pages 31, 34, 39, and 43). These treatments would be accomplished by hand only and would be non-commercial in nature to treat the smaller diameter materials retaining all the larger trees for stream shade and large woody debris recruitment. Alternative 5 acres are reduced due to the biomass removal proposed in selected non-commercial units; The EA on page 43 indicates that if biomass removal is not done within these units the RHCA's will receive hand treatments as described in Alternative 2.

Anthony Lakes Mountain Resort (ALMR) Comments

ALMR1 - ALMR has been working with the WWNF on management of the existing, and an expansion of single track, non-motorized trail system over the past five years. ALMR has also been working with Blue Mountain Singletrack Trails Club (BMSTC), an International Mountain Biking Association recognized chapter, on the development of non-motorized trails throughout our region. More specifically within Anthony Lakes Special Use permit area and the potential of a single track trails system from Pilcher Creek to ALMR (as proposed by BMSTC in 2009).

It is disappointing that there is no alternative in the EFVMP that considers options for such trails, and in fact, existing and new non-motorized trails are not addressed? ALMR has significant potential as a summer destination area for mountain biking and hiking. With the infrastructure already in place at ALMR and trails both single track and winter time alpine/Nordic trails already cut out; enhancement of the existing trails and proposed new trails should be addressed at this time.

ALMR' s comments on the EFVMP are as follows:

1. Supports the vegetation aspects of the plan.
2. Does not support the lack of proposed management alternatives and overall management of the existing non-motorized trails in the area.
3. Requests that existing and proposed non-motorized single track trails be addressed at this time both within ALMR special use permit area and the proposed Pilcher Creek to ALMR trail network.

Response - *The existence of a user built/designed single track non-motorized trail system in the East Face project area was recognized during planning for the East Face project. While this is not a designated trail system managed by the USFS, the East Face project Recreation Specialist acknowledged that it is popular amongst its users and needed to be considered during planning for fuels reduction activities. Because designating and designing a single track non-motorized trail system is outside the scope of the East Face project and does not fit the funding or purpose and need as an action connected to fuel reduction activities, project design criteria ensured that future options and opportunities for designation of these trails would be maintained. The following mitigation measure is part of project design in the EA on pages 57-58.*

Post-sale management of the following roads will be coordinated with the District Recreation Manager in order to maintain mountain biking options and opportunities within the area:

Roads: 7315, 7315030, 7315035, 7315040, 7315045, 7315047, 7315048, 7315090, 7312, 7312031, 7312032, 7312033, 7312034, and 7312035

A system of non-motorized trails would benefit more from a site-specific analysis focused strictly on the design and designation of the entire trail system which would meet the short term and longer term needs of all user groups.

Anonymous (Anon) Comments

Anon1 - I completely oppose this project. Timber sales are a vestige of a near-dead industry based on natural resource extraction that has been proven unsustainable time and again. The long-term economic benefits of recreation and the long-term health-benefits for plants, animals and people vastly outweigh the short-term profits of a logging sale couched as a thinning effort.

Response - *The economic benefits of the activities proposed in the East Face project were analyzed on pages 122-127 of the EA. A comparison between proposed fuel reduction activities and recreational values within the project area was not considered because it was not raised as an issue during scoping. The effects of the East Face fuels reduction activities on recreation resources within the area are described in the EA on pages 259-266.*

B.Pereira (BP) Comments

BP1 – The selling of the East Face project reducing the wild fires is going to create unhealthy, clear cut eyesores, in the district due to timber cutting. It will take away old growth trees, disrupt wildlife that needs the protection and hideaways from the old growth. The streams will be polluted – can't be helped from the equipment. Plants that don't belong in the forest will hitch a ride in the tire wells of the heavy trucks and tractors.

Response - *The effects of the alternatives proposed in the East Face project area described in detail in the EA on the following pages:*

- *Forest Health and Sustainability – EA pages 127-140*
- *Scenery – EA pages 31, 35, 39, 43, 58-59, 266-286*
- *Old Growth and Old Growth Dependent Species – EA pages 98-122*
- *Water Quality – EA pages 155-177*
- *Invasive Species – EA pages 53-54, 224-240*

BP2 – Who says wildfire is bad? Its being going on for hundreds of years. The fire gets rid of the underbrush. Nothing is trampled underfoot by trucks or tractors. Fire will go away when the climate turns to cooling weather. It is a natural state – the forest grows back better than ever. People should not be allowed to live in national forests. If they want to, it is at their own risk.

Response - *We recognize that fire is a natural part of the forces that shape a landscape and the intent of this project has never been to “fireproof” it. The strategically located fuel reduction areas were designed to “compartmentalize” the project area and provide for smaller blocks of the area within which fire managers could safely fight and manage fires from to hopefully reduce the potential size and intensity of a wildfire on the landscape, not eliminate it. Given the types of potential vegetation groups within this project area and their juxtaposition to private land interface areas, WUIs, and vast acres of inventoried roadless areas, fire managers are seeking to successfully utilize and manage fire on the landscape that are*

hundreds of acres in size instead of thousands of acres in size in order to not only create the heterogeneity desired but also to continue to provide recreation opportunities, habitat for endangered species, water for agricultural needs, and protect private lands and facilities.

Baker County (BCo) Comments

BCo1 - Baker County strongly supports Alternative 5 as the alternative that would best meet our objectives. If possible at this point in the process, we would support any additional treatments that could be added to the selected alternative to maximize the amount of lands protected.

Response: Additional treatments were included based on scoping comments on the proposed action requesting additional treatment acres. In response, Alternative 5 was developed incorporating additional stands identified for commercial treatment as well as analyzing biomass utilization in non-commercial units where appropriate (EA pages 41-45). This alternative represents the maximum number of treatments defined within the project area to meet the purpose and need while complying with Forest Plan standards and guidelines and other resource protection measures.

As described on page 133 of the EA:

Of the 47,636 acre project area approximately 44,620 acres are forested (94% of the project area). There are 12,534 acres in reserved lands such as allocated old growth, inventoried roadless, and riparian buffers. Of the non-reserved forested acres, 9,121 acres (28% of the available forested acres) have received a commercial entry and 2,991 acres have had a non-commercial treatment in last 35 years. (Table 61)

Table 61 - Percentage of Treatments Across the Planning Area

Alternatives	Total Acres Treated	% of Total Available Acres Treated	Commercial Acres Treated	% of Available Acres Treated in East Face-Commercial	% of Available Acres Treated in Project Area-Commercial Last 35 Years
1	0	0	0	0	28
2	17,098	53	6,722	29	57
3	13,654	43	3,879	17	45
4	16,500	51	2,844	12	40
5	18,034	56	10,221	45	73

Based on these calculations, the commercial and non-commercial treatments proposed in the action alternatives in combination with the past commercial treatments would indicate that more than 75% of the available project area acres are under active management.

BCo2 - The silvicultural treatments seem to be designed primarily for the growth & vigor of the stands. There is no mention of thinning wider for fire hazard reduction. Often stands need to be thinned wider than the optimal spacing for growth in order to space the crowns far enough apart for now and into the reasonable future to reduce the likelihood of crown fire propagation. This would not only reduce the threat of stand replacement crown fires, but also reduce the need for repeated thinning on short cycles to maintain growth rates. With the additional volume harvested

per acre, you will also increase the economic viability of the timber harvest and be able to treat more acres of at-risk forests.

Response: *The treatment designs also include an assessment of fire hazard reduction and change in fire behavior. The fire behavior modeling utilized in this analysis indicates that the prescriptions such as "thinning stands from below" to a basal area of 100 (Sq ft) or less with a concurrent surface fuel treatment, results in stand conditions with a low potential for crown fire. Additionally, the thinning is designed to leave the stands comprised of a higher percentage of western larch which also aids in reducing crown fire potential. The fire behavior analysis indicates treatment to lower basal areas is not needed to meet fire behavior objectives in this project area. The fire behavior modeling (Fire/Fuels Effects Report Appendix A in the East Face Analysis File) results show how the proposed thinning effects fire behavior in treated stands. These results are summarized in the EA on pages 77-91.*

BCo3 - We question why there are large blank areas on the maps with no forest health treatments planned. No explanation is given why this is so. We urge you to treat as many areas as possible with this entry to reduce catastrophic wildfires, improve forest health, and increase the economic viability of this project.

Response: *Refer to Response for BCo1*

BCo4 - Why are 180-300 trees per acre specified for reforestation? A reasonable goal is 100 tpa at establishment (5 years)' and 50 tpa at 50 years old. Given an average mortality rate of 33%, 150 tpa planted would yield 100 tpa at age 5. This would not only save reforestation costs but also reduce the need for pre-commercial thinning in the future.

Response: *The main reason for reforestation efforts in the East Face area is to provide for a more seral component of tree species in the future and to provide for adequately stocked stands. The future treatments for the landscape will be to re-enter the stand when the average diameter is 10" diameter breast height (DBH). On low to moderate productive sites 153 to 269 trees per acre (TPA) at 10" DBH would indicate a need to thin to a residual density of between 103 to 180 TPA. On La Grande District mortality rates for planted Douglas-fir and western larch is approximately 40% (La Grande Survival and Growth Reports 2009-2013). At 40% mortality rates planting 300 TPA would result in 180 TPA of the preferred species.*

BCo5 - This project is planned to not remove any trees over 21" dbh. We ask that this be changed to leave 11 trees over 150 years old. This would allow younger, fast growing trees such as grand fir to be removed and slower growing pine and larch to be retained. The pine and larch are preferred for resiliency and long term sustainability of the forest and are more fire resistant. We support a Forest Plan amendment for this project to allow for the removal of young, large fir trees so that the forest may be properly managed.

Response: *We assume the 11 trees over 150 years old mentioned in your comment are on a per acre basis. Based on our HRV analysis of the watershed (Page 100 of the EA), we found that old, large structure was lacking across the watershed in all potential vegetation groups (PVG) of Old Forest Single Story and in the moist PVG for Old Forest Multi Story. In these situations, because large structure is so limited on the landscape, it was decided to retain the existing large tree component since removing existing large and*

old structure would not be consistent with trying to move the landscape to the Historical Range of Variation (HRV). All action alternatives do propose treatment in dry OFMS to increase OFSS conditions. The prescribed treatments will help to achieve OFSS structure stage without removing larger diameter trees. Proposed treatments in all structure stages will target removal of grand fir (less than 21" dbh) in order to promote ponderosa pine, Douglas-fir and western larch.

BCo6 - Post & Pole removal in old burns that have regenerated to lodgepole pine would reduce the stocking level and provide a merchantable product and employment for smaller operators.

Response: *Post and pole removal options will be explored within the old burn area units when project layout and design begins. The goal is to achieve fuel reduction goals within the unit boundaries; therefore, if post and pole operators are interested in these areas those opportunities will be accommodated*

BCo7 - Riparian areas provide important ecological values for aquatic and terrestrial species and clean cool water for streams. Like the uplands that surround them, they are also substantially changed from historic conditions. The development of dense conifer canopies has shaded out important shrub species and the increased transpiration by fir trees has reduced stream flows, especially during the hot, dry summer months. This project does not provide for any riparian thinning treatments to reduce the conifer in-growth and improve streamside shrub habitat and increase summer stream flows by reducing transpiration. Breaking up the continuous conifer canopy will also reduce the ability of fire to use these stream corridors as unbroken fire wicks that allow fire to rapidly spread.

Response: *A detailed description of the stream conditions within the East Face project area is located in the Fisheries and Watershed Existing Condition report in the East Face analysis file. In general, stream surveys within the East Face project area for fishbearing streams revealed that the streams and overall riparian vegetation were generally in very good condition with lush streamside shrub vegetation, adequate stream shading, and stable banks.*

However, some riparian areas that consist of young, dense conifer canopies will be thinned: RHCA treatments are proposed within 35–51 units for a total of approximately 792–991 acres (EA pages 31, 34, 39, and 43). These treatments would be accomplished by hand only and would be non-commercial in nature to treat the smaller diameter materials retaining all the larger trees for stream shade and large woody debris recruitment

Results of habitat surveys for fishbearing streams in the East Face project area

Stream/Year Surveyed	Survey Length (miles)	Pools (#/mile)	Wetted Width (ft)	Stable Banks (%)	W/D Ratio	LWD (pcs/mi)
Antone Creek/2014	4.4	29	8.5	96.4	12.2	65
Anthony Creek/2014	6.9	25	14.6	100	23.6	5
Indian Creek/2014	2.4	47	5.0	100	5.7	49
North Fork Anthony Cr./2014	3.4	59	8.7	99.5	19.3	18
Dutch Creek/2014	1.5	123	4.8	98.2	17.7	17

Stream/Year Surveyed	Survey Length (miles)	Pools (#/mile)	Wetted Width (ft)	Stable Banks (%)	W/D Ratio	LWD (pcs/mi)
Wolf Creek/2013	5.8	34	9.3	96	19.8	53
North Fork Wolf Cr./2013	0.8	51	6.9	100	13.5	74
East Fork Clear Creek/ 2014	3.7	95	6.5	95	23.3	47
West Fork Clear Creek/ 2013	1.8	106	4.2	97	13.0	29
Upper Beaver Cr./ 1992	4.3	20	6.1	ND	11.8	13

ND=No Data

While seven out of the 10 streams surveyed were below the riparian management objective (RMO) for pools/mile at the time of the survey, Dutch Creek and the West Fork of Clear Creek both exceeded the RMO for pools per mile with 123 and 106 pools per mile. The East Fork of Clear Creek came very close to meeting the RMO with 95 pools per mile.

The following streams did not meet the state water quality standard for native Oregon bull trout spawning and rearing use where water bodies must not be warmer than 53.6°F.

- Anthony Creek Upstream of North Fork Confluence
- Anthony Creek Upstream of Indian Creek Confluence
- Indian Creek
- North Fork Anthony Creek
- Wolf Creek
- North Fork Wolf Creek

All eight of the streams where temperature data is available have redband trout and these streams were within the temperature requirements for this species. Six of the eight streams that have temperatures data have bull trout and none of these streams met temperature requirements for bull trout, which are a species that require much colder water temperature (temperature must not be warmer than maximum weekly average of 53.6 degrees F).

Nine of the 10 streams fishbearing streams met the RMO for streambank stability of >90%. No streambank stability data is available for one stream surveyed in 1992, Upper Beaver Creek. One of the streams surveyed within the project area, Indian Creek, met the INFISH width to depth ratio of <10. The remaining streams have width to depth ratios within the expected range of Rosgen stream types (Rosgen, 1996).

Anthony Creek, North Fork Anthony Creek, Dutch Creek, and Upper Beaver Creek did not meet the standard of >20 pieces of large wood per mile; however, Antone Creek, Indian Creek, Wolf Creek, North Fork Wolf Creek, East Fork Clear Creek, and West Fork Clear Creek exceeded the standard of > 20 pieces of large wood per mile.

BCo8 - We support the utilization of as much of the biomass generated by the treatments in this area. It not only contributes to the local economy and reduces treatment costs, but also reduces

the amount of disposal by burning and the resultant smoke. We ask you to design all of the alternatives to allow removal of biomass, in case economics improve and it can be removed. If the potential ground impacts are analyzed now, removal can be done any time in the near future without additional NEPA analysis.

Response: *The WWNF Forest Supervisor is the decision maker for the East Face project. Because the effects of biomass removal were analyzed in Alternative 5 and not found to be significant, the decision maker can choose to incorporate biomass removal within the units analyzed into his preferred alternative in the Decision Notice. Therefore, there is no need to develop a subset of the action alternatives in this project to add biomass removal to each alternative.*

BCo9 - The prescribed burning does not specify mortality limits for differing tree size classes or the species. Doing so is important to properly design the burning parameters to achieve the desired results (remove excess reproduction and retain larger trees) as well as allow the public to know the actual prescribed burn objectives. Prescribed burning should not only reduce the surface fuel loads but also control conifer in-growth to reduce the need for future thinning.

Response: *Prescribed fire treatments are an effective means to reduce surface fuels, thin suppressed overstocked regeneration and increase canopy base height. These management ignited fires are implemented when fuel moistures are moderate, (typically spring or late fall), and generally burn with lower intensity than wildfires. Fine fuels are burned, but most large diameter fuels are only charred. Direct effects of prescribed fire include reducing surface fuel loadings and potential flame lengths, thus reducing potential fire behavior. Because prescribed fires are less intense and less severe than most wildfires, they are less likely to damage soils and kill overstory trees. Existing standing large snags (>12 inches, DBH) would be protected during firing operations through avoidance or fuels reduction (FDR) as practical. Prescribed fire objectives are:*

- 1. Reduce surface fuels loadings of small diameter (0-3") material to 3 tons per acre.*
- 2. Reduce tree density to appropriate levels for site conditions.*
- 3. Create a seed bed for natural regeneration of ponderosa pine, western larch and Douglas-fir.*
- 4. Enhance forage for large game animals and cattle.*
- 5. Limit overstory mortality to less than 10%.*

BCo10 - We do not agree that connectivity corridors are needed to allow free movement of wildlife. If connectivity corridors are kept in this project retaining cover canopy in the upper 1/3 of the site potential does not meet fire/forest health objectives, nor does it retain sufficient cover for wildlife needs.

Response: *It is generally accepted among conservation biologists that landscape connectivity enhances population viability for many species (Taylor et al. 1993, Hunter 1996, Meffe & Carroll 1997, Beier & Noss 1998). In light of human activities often influencing natural connections among landscapes, land managers are tasked with still maintaining species viability. The SCREENS Forest Plan Amendment requires that corridors 400 ft wide at their narrowest point and with canopy closure within 1/3 of the site potential be maintained to provide at least 2 different connections to a particular old growth or MA15 stand. These corridors are not intended to provide source (breeding)*

habitat, which often requires higher canopy closure, but to allow free movement between suitable breeding habitats (EA, page 100) in order to ensure genetic flow. These types of small corridors can be controversial because of their species-specific nature; however the majority of research finds a positive benefit associated with them (Beier 1998) even if they do not perform the function of true landscape connectivity. The design of East Face also included identifying landscape level connectivity across the watersheds (EA, page 101). The areas contain the majority of old growth and management indicator species (MIS) source habitat within the project area and incorporate proposed commercial and fuels treatments alongside them to help protect them from insect/disease/wildfire and meet our objectives of maintaining species viability while promoting fire/forest health objectives.

Beier, P., and Noss, R. 1998. Do habitat corridors provide connectivity? Conservation Biology, 12: 1241-1252.

Hunter, M.L. 1996. Fundamentals of conservation biology. Blackwell Science, Cambridge, Massachusetts.

Meffe, G.K., and C.R. Carroll. 1997. Conservation reserves in heterogeneous landscapes. Pages 305-343 in G.K. Meffe and C.R. Carroll and contributors. Principles of conservation biology. 2nd edition. Sinauer Associates, Sunderland, Massachusetts.

Taylor, P.D., Fahrig, L., Henein, K., Merriam, G. 1993. Connectivity is a vital element of landscape structure. Oikos, 68(3): 571-573.

BCo11 - The Road Management Plan calls for reclosing most of the roads that were previously closed. The current road density is currently 1.74 mi/mi², the Forest Plan standard is 2.5 mi/mi². There is no need to reclose roads when the density is already below the forest plan standard. We advocate leaving more roads open for future management of the vegetation through thinning and prescribed burning and to facilitate rapid initial attack in and near the WUI. Any roads to be reclosed should be in coordination with the County and should be done by gates or pole barricades instead of earth berms. Earth berms unnecessarily delay initial attack access by fire engines and crews.

Response: *Refer to the response for BCo12 below. There is not just one Forest Plan open road density (ORD) standard for the entire forest; therefore, the current road density for the entire project area cannot be compared to the Forest Plan standard for Management Area 1 (2.5 mi/mi²). Refer to the Table 103 on page 249 of the EA for the ORD calculations for those management areas with ORD standards. The interdisciplinary team involved in this project did a site specific roads analysis for all the roads in the project area and identified which roads would be needed for future management of forest resources and for firefighting access. Roads where a specific need for firefighting access was identified would be closed by gates to facilitate easy re-entry in case of need. Additional road access is proposed within the middle of the project area. Public comment during the scoping for this project generally supported the post-sale road management plan expressing concern about the poor condition of the roads within the project area and the impacts they are having on big game security and their use of the area.*

BCo12 - The road densities as computed in the EA do not appear to follow Forest Plan methods

which specify they are to be computed on a sub-watershed basis. The EA shows them to be calculated only on the portions within the project area, resulting in higher densities. Even so, using the area within the project boundary gives 1.67 mi/mi² instead of the 1.74 mi/mi² value shown on page 149. In the major sub-watersheds (L. Anthony; U. Anthony, U. Wolf) the open road density is 1.42 mi/mi². The County asks that they be calculated properly and that the road density not be reduced below the Forest Plan target of 2.5 mi/mi².

Response: *The method for calculating Forest Plan open road densities (ORDs) is described generally in the WWNF Forest Plan (LRMP, page 4-35). This description indicates that ORDs should be determined at a subwatershed level (6th HUC) by management area and be expressed in miles per square mile. The following clarifications were made at the forest level to provide for consistent calculation of ORDs during planning activities across the forest.*

- *Only NFS lands are included in the analysis*
- *Private lands and the roads that cross them (including NFS roads) are removed from consideration in this analysis due to a lack of site specific private road information about their existence and condition.*
- *State and County roads located within NFS boundaries are included in this analysis as their existence, condition, and benefits/impacts to resources are well known.*
- *Allocated old growth areas (MA15) which are scattered throughout other management areas are included in the acres of the management area that surrounds it (MAs 1, 1W, 3, or 3A).*
- *Slivers of ≤ 0.1 square miles that occur along boundaries where subwatersheds, planning areas, and management areas do not match up perfectly will be dropped from consideration in these calculations as they are at an inappropriate scale for this type of analysis.*
- *Queries are done by 6th HUC subwatershed for each 5th HUC watershed to ensure that subwatersheds with the same name are not combined skewing the information.*
- *Management areas combined with subwatershed boundaries that encompass less than one square mile were also dropped from consideration in this analysis due to inappropriate scale.*

Road density standards and guidelines are referenced in Chapter 4 of the Forest's Land and Resource Management Plan (Forest Plan), and are often indicators for effects to wildlife, soils, and water quality. Open road density guidelines are specifically addressed with respect to management areas at a subwatershed scale. Only five management areas have specific target road densities specified: MA 1 (timber emphasis), MA 1W (timber/wildlife emphasis), MA 3/3A (big game winter/summer range), and MA 18 (Anadromous Fish Emphasis). For MA 3, "Snow will effectively close most winter range areas to access by wheeled vehicles during the winter months, consequently, road closures more restrictive than those applied to Management Area 1 will not normally be necessary" (Wallowa-Whitman FLRMP, pp. 4-63).

Target values for open road densities (ORDs) stated in the Forest Plan (Chapter 4):

<i>Management Area 1</i>	<i>2.5 miles/mile²</i>
<i>Management Area 1W</i>	<i>1.5 miles/mile²</i>
<i>Management Area 3</i>	<i>1.5 miles/mile²</i>
<i>Management Area 3A</i>	<i>1.5 miles/mile²</i>
<i>Management Area 18</i>	<i>1.5 miles/mile²</i>

BCo13 - There was no mention of keeping road access open for mining claims. We request a map showing all mining, claims, Townships Ranges and sections, and *the* current and proposed road access status (level 1, 2, etc.). It is the Counties position that all mining claims shall have appropriate road access regardless if they have a current approved operating plan or not.

Response: *When planning began on the East Face project in 2012 the South Zone Mining Specialist ran an LR2000 report from the BLM database which revealed there were no active mining claims within the project area. As a follow-up to the comments received during the comment period Wade Krist, South Zone Mining Specialist ran another report in November 2015. This report confirmed that there are still no active mining claims within the East Face project area. He also ran a report on the closed claims within the project area. Approximately 48 claims have been closed in the project area within the last 3 to 38 years (with the majority of them closing between 1986 and 1990), meaning they are not active and the claim as been closed. An analysis of the access to these claims was completed and the East Face project would not propose to change the existing access to any of these claims under Alternatives 2, 3, or 4; however, a very small amount of the motor vehicle access may be changed under Alternative 5 which proposes to promulgate motor vehicle access on currently closed roads which would be opened and reclosed. Should an operator come forward in the future with a Plan of Operations, access would be coordinated at that time and a road use permit provided for mining activities.*

BCo14 - In the Mitigation Measures section it specifies that green tree replacements (trees left to provide for a continuous supply of future snags for cavity nesting wildlife) are to be left at 25-45 tpa. Analysis of growth and mortality rates and typical snag longevity periods on the neighboring Malheur NF showed that 12-15 tpa green trees retained met the long term snag replacement needs. If you have a different analysis for this area we would like to have it shown, otherwise we consider 25-45 green tree snag replacement trees to be excessive and contributing to unhealthy forest conditions.

Response: *The initial analysis for green tree replacements (GTR) was developed specifically for the Wallowa-Whitman National Forest in 1993. A copy of this document can be supplied if requested. The intent of GTR's is to provide snags for nesting, feeding, and perching at numbers to maintain snag levels throughout different cutting cycles. In a majority of our treatments we leave adequate snag numbers to meet the 1993 guidelines. In our regeneration harvests we fall short. In 2014, the District conducted Forest Vegetation Simulation (FVS) runs to determine if leaving 25-45 GTR's per acre would maintain viable snag levels. The FVS analysis determined that 25-45 TPA the regeneration harvests would provide for sufficient snag numbers.*

BCo15 - Raptor nest protection is not specified as to timing nor distance, so we are unable to comment on the appropriateness of the protections. However in the past they have proven to be overly restrictive. We would like to see them specified so we can be assured they are appropriate.

Response: *Raptor nest protection is species specific and protection buffers can range from 200ft for Great Gray owls to a 30 acre buffer for goshawks. Timing restrictions for raptors generally ranges from March-August with the majority of species requiring timing restrictions from April-July. The forest service is required to protect all known raptor nests*

through a number of laws; The Migratory Bird Treaty Act, The Eagle Act and the SCREENS Forest Plan Amendment. There are currently no known raptor nests within the East Face project area that conflict with proposed treatments, however any nests found through future surveys or while laying out treatments would be incorporated into the final prescription.

BCo16 - The current elk cover/forage ratio is currently 71:29. The optimal ratio is 40:60, and this indicates a need to thin and regenerate harvest more stands to improve forage production. This project does increase the amount of forage, but could certainly improve elk habitat even more if more stands were converted to forage by opening up the canopies. This is important to retain elk on public lands and off of private farm and ranch lands.

Response: *Research has shown that forage is a high driver of elk distribution and that not all forage is created equal, with forest vegetation types containing intermediate canopy closure and wet meadows supporting the highest nutrition during the late summer, a time that plays a key role in elk survival (Cook et al. 1996). Opening stands in inappropriate nutritional areas will not influence elk distribution. The Pacific Northwest Research Station is currently developing a model that helps to identify areas of high elk selection, incorporating nutrition as one of the model variables (<http://www.fs.fed.us/pnw/research/elk/bluemtns/index.shtml>). This model was used in identifying areas that would have the highest influence on elk distribution (EA, page 151). The highest quality nutrition generally occurs in higher elevation areas with moist PVG. Balancing an interest in increasing forage with the purpose and need of restoring forest structure stages to HRV as well as feasibility of access and economics resulted in the conversion of cover to forage that is proposed. Additionally, elk distribution and retention of elk on public lands must also consider disturbance effects associated with access. Creation of forage/loss of cover without thoughtful management of access related disturbance is unlikely to benefit elk distribution and impacts to private lands.*

Cook, J.G., L.L. Irwan, L.D. Bryant, R.A. Riggs, and J.W. Thomas. 1998. Relations of forest cover and condition of elk: a test of the thermal cover hypothesis on summer and winter. Wildlife Monographs 141: 1-61.

BCo17 - For a project of this size we are concerned that the small amount of prescribed burning included in this project will not be enough to reduce surface fuels and control natural regeneration. It appears that the burning that is planned is primarily located in the dry forests. This is appropriate, but the moist forest types also experienced frequent fires in the past and it would also be appropriate to include more prescribed burning to economically improve the forest landscape, especially within several miles of the forest boundary and WUIs.

Response: *Prescribe fire treatments in moist forest are more effective when they follow a mechanical fuels reduction treatment designed to remove ladder fuels and reduce surface fuels. The burn blocks identified for broadcast burning are only a part of the burning proposed in the East Face project area. The following table illustrates the acres of prescribed burning proposed in moist forest following mechanical treatments, reference the unit by unit data tables for each alternative in Appendices A-C of the EA.*

Acres of prescribed fire treatments in East Face project area

Treatment	Alt 1	Alt 2	Alt 3	Alt 4	Alt 5
Jack Pot Burn	0	3,835	2,820	2,823	4,150

Site Prep Burn	0	127	0	26	127
Natural Fuels Burn	0	6,685	6,043	6,643	6,685
Grapple Pile Burn	0	5,425	3,615	6,540	2,309
Hand Pile Burn	0	2,102	3,090	4,099	3,929
Total	0	18,174	15,568	20,131	17,200

BCo18 - There is no evidence that the timber harvest was designed to improve the economics of the project. Thinning to lower densities (removing a greater proportion of the trees) increases the economics when thinning from below 'because each additional tree is a larger tree, the increased growing room will take longer to close back increasing the time between harvests, and the resulting trees will grow faster improving the future economics too. Harvesting fast growing trees over 21" (and less than 150 years old) also improves the economics of the harvest operation and enables better selection of leave tree species (remove more of the fast growing fir and leaving pine) for forest resiliency.

Response: *Harvest prescriptions were developed which address the purpose and need of the project which focuses on strategically located fuel reduction activities, restoring and promoting forest structure and composition, and enhancing landscape resilience to future insect and disease risk. (Reference page 21 of Preliminary EA) Implementing the silvicultural activities is expected to cause a consistent reduction in tree density for the treatment units to either the moderate or low density condition after implementation. Reference Table 62 page 134 of EA which indicates the increase in low and medium density classes in all alternatives.*

The harvest of trees over 21" DBH was considered during development of the analysis but was eliminated from detailed further study. (Reference page 19 of the EA)

BCo19 - Consider "D by P" (designation by prescription) harvest tree selection to reduce marking costs in appropriate stands.

Response: *Current Forest Service and Region Six direction allows for the use of "D X P" (designation by prescription) and it will be considered where appropriate for the East Face project. Selection of the designation method(s) will also consider other factors besides marking relating to implementation costs including timber volume estimations, contract administration, and prescription complexity.*

BCo20 - There was no evidence of the amount of total stands in need of treatment (the silvicultural diagnosis) to improve forest health and fire resiliency and any comparison between the alternatives of the percentage treated. Is there an opportunity to treat more? Do any of the treatments within the last 35 years need retreatment? Without these numbers it is difficult to make a comparison of the relative merits of the alternatives.

Response: *Refer to response BCo1. The percentage of overstocked stands within the project area treated is discussed in the EA on page 134. Appendix 1 of the Silviculture Effects Analysis report (displayed below) provides "trees per acre" database queries for three tree density categories (low, moderate, high), three stand size classes (seedlings/saplings, poles, small+ trees) and three potential vegetation groups within the East Face project area. Numbers derived using Powell (2013).*

PVG COLD	Diameter (inches)	Densities (Acres)		
	QMD	LOW	MOD	HIGH
	<=3	466	567	6,737
	4-7	528	728	3,619
	>7	122	43	2,643
	TOTALS	1,116	1,338	12,999
		7%	9%	84%

PVG Moist	Diameter (inches)	Densities (Acres)		
	QMD	LOW	MOD	HIGH
	<=3	1,577	2,332	5,658
	4-7	919	1,027	5,308
	>7	427	537	1,172
	TOTALS	2,923	3,896	12,138
		15%	21%	64%

PVG DRY	Diameter (inches)	Densities (Acres)		
	QMD	LOW	MOD	HIGH
	<=3	479	343	1,274
	4-7	264	115	4063
	>7	445	182	1,710
	TOTALS	1,188	640	7,047
		13%	7%	79%

PVG= Potential Vegetation Group - Current amounts are summarized from the East Face vegetation database (forested lands only).

BCo21 - We ask that you pre-commercial thin between the ski runs at Anthony Lakes ski area to reduce the understory stocking in-growth and the chance of stand replacement fire inside the ski area boundary and the resultant loss of scenic values. Thinning of dense lodgepole stands will also reduce the likelihood of bark beetle mortality and the creation of hazardous snags that would then need to be removed to ensure the safety of the public.

Response: *The Anthony Lakes Ski Resort is managed under a Special Use permit. Management of recreation activities and opportunities in the ski area is outside of the scope of this project and would need to be covered under a separate planning process focusing on ski area management. The permit holders/managers of the Anthony Lakes Ski Area have been coordinated with regarding activities in the East Face project and have not expressed any concerns or interest in changing the character of the recreation experience at the ski area.*

Blue Mountain Biodiversity Project (BMBP) Comments

BMBP1 - *Proposed action fails to meet/contradicts the Purpose and Need for the project.*

Logging and roading activities as proposed in the East Face EA do not meet the Purpose and Need. For example, the East Face EA states (pg. 7) that there is a need “to restore and promote forest structural and compositional conditions reflective of historic range of variation across the planning area.” However, the project proposes logging that would move forest conditions outside of historic norms by shifting fire regimes away from natural mixed-intensity and high-intensity fires that historically dominated mixed conifer and Lodgepole forests. The logging proposed in the EA also proposes inappropriate reductions of forest density in mixed conifer forests, and to move these forests outside of historic norms. For example, the unique ecosystems created by high-intensity fires and mixed-intensity fires are of higher quality to many species than lower severity post-fire areas. Many species specifically depend on ecosystems created by high-intensity fire. Please see the “Failure to Disclose Scientific Controversy” section as well as other sections of this document for further discussions of historic fire regimes and forest density, and for accompanying citations.

Response – *Treatments proposed in East Face would promote forest structure and composition reflective of range of variation. Disturbance regimes determine structure, species, composition, and densities across the landscape (Powell, 2013). However, mimicking natural disturbance regimes cannot always be achieved because:*

- 1. significant changes have already occurred (i.e. much higher amounts of grand fir numbers),*
- 2. climate change overtime (i.e. drier, warmer climate will lead to more intense fires and more susceptibility of tree species to insect and disease,*
- 3. past disturbances included some large oscillations that are not acceptable (PNW Research Station, 2002).*

The treatments in East Face moist mixed conifer forests to reduce density will move towards a compositional and structural landscape that has been altered due to fire exclusion and past management.

While grand fir and mixed conifer forests experienced mixed severity fire that reduces fuels and spared large trees the condition in many of these stands are tree layers dominated by grand fir because of past activities. Intermediate treatments can maintain larger structure and be a first step towards encouraging more seral species (Franklin, no date).

The range of variability for moist upland forests high density class is 15-30% of that type (Powell, 2012). In the East Face area over 60% of the moist uplands forest acres are overstocked, following treatments 37% of the moist acres will be in the high density range.

In moist upland forest types changes to species composition will result in 40% of the acres dominated by grand fir. The range of variation is 15-30%. The amount of grand fir is still above the range but will be reduced from 22% above to 12% above. The remaining cover types after treatments are within the range of variability except for Douglas-fir. The Douglas-fir cover type in the moist upland forest will change

from 10% below to 6% below.

The proposed treatments in East Face do not result in inappropriate reductions in density or composition and these forest vegetation types will not be outside historic norms.

BMBP2 - The East Face EA states (pg. 7) that there is a need “to enhance landscape resilience to future wildfire, insect and disease risk”. However, the actions proposed in the East Face EA are unlikely to decrease the risk of insect outbreaks, including Bark beetle outbreaks. Please see the “Failure to Disclose Scientific Controversy” section for further discussions showing scientific controversy about the efficacy of logging to control Bark beetles, and examples of peer reviewed studies showing that logging may exacerbate beetle outbreaks. Furthermore, disease, insects, and fire are an integral part of healthy ecosystem functions in these forests. Reducing their occurrence will harm wildlife and wildlife habitats.

Response – *Refer to the Response to comment BMBP9.*

BMBP3 - The East Face EA states (pg. 7) that there is a need “to enhance the diversity and quality of habitat conditions across the planning area to help reduce ungulate impacts on agricultural lands and improve overall diversity and distribution of wildlife habitat.” However, actions in the East Face EA propose to reduce necessary cover for deer and elk, potentially harming their success and viability in this area.

Response – *A historic range of variation analysis within the project watersheds shows that there is an overabundance of understory reinitiation structural stage, characterized by small dense understory trees, and a deficit in stand initiation structural stage, which would be characterized by low canopy cover and multiple grass, forbs and shrubs (Refer to the EA page 6). This is echoed in the Habitat Effectiveness Index model that was run for elk which found the existing Cover: Forage ratio to be 71:29, with an optimal ratio of 40:60 (Refer to the EA page 148). These findings indicate a large departure in the amount of forage that was historically present and the current amount and distribution. Refer to the EA, page 151 for an analysis of the cover conversions by action alternative.*

BMBP4 - The East Face EA states (pg. 7) that there is a need “to maintain and enhance connectivity of ecosystems by providing corridors that will promote resilient and sustainable landscapes.” Fuels reductions proposed in the East Face EA are unlikely to be as effective as intended. In addition, any marginally lowered fire risk obtained would be short-term, with a short window of time before re-entry and future logging would be needed to maintain artificially low forest densities. This is not “sustainable”, and the cumulative impacts of repeated future entries was not acknowledged or analyzed by the EA. True ecosystem health and resilience will be put at risk from many well-documented negative effects related to logging (degraded soil conditions, water quality, and wildlife corridors, lowered snag densities and lowered snag recruitment, increased road density and road-related impacts, etc). The risks to ecosystems from logging and roading are well documented, while any perceived benefits are scientifically controversial, do not address the root causes of current ecosystem stressors (widespread damage from logging, roads, and grazing), and will not protect overall forest health or achieve true resilience. We are particularly concerned about how wildlife corridors for species requiring dense forests will be negatively affected by the East Face project.

Response – *It is generally accepted among conservation biologists that landscape connectivity enhances population viability for many species (Taylor et al. 1993, Hunter 1996, Meffe & Carroll 1997, Beier & Noss 1998). In light of human activities often influencing natural connections among landscapes, land managers are tasked with still maintaining species viability. The SCREENS Forest Plan Amendment requires that corridors 400 ft wide at their narrowest point and with canopy closure within 1/3 of the site potential be maintained to provide at least 2 different connections to a particular old growth or MA15 stand. In general, these corridors are being retained intact although there may be small amounts of non-commercial treatments along a few of the edges. In addition to these large landscape level corridors, connective corridors between stands of old forest were also defined within the project area which generally included the entire unit, not the minimum 400' described under Screens.*

These corridors are not intended to provide source (breeding) habitat, which often requires higher canopy closure, but to allow free movement between suitable breeding habitats (EA, page 100) in order to ensure genetic flow. These types of small corridors can be controversial because of their species-specific nature; however the majority of research finds a positive benefit associated with them (Beier 1998) even if they do not perform the function of true landscape connectivity.

The design of East Face also included identifying landscape level connectivity across the watersheds (Refer to Figure 2 in the EA on page 101, Watershed Connectivity within the East Face Project Area). The areas contain the majority of old growth and management indicator species (MIS) source habitat within the project area and incorporate proposed commercial and fuels treatments alongside them to help protect them from insect/disease/wildfire and meet our objectives of maintaining species viability while promoting fire/forest health objectives. The effects of these corridors are described in the EA pages 102-104.

Beier, P., and Noss, R. 1998. Do habitat corridors provide connectivity? Conservation Biology, 12: 1241-1252.

Hunter, M.L. 1996. Fundamentals of conservation biology. Blackwell Science, Cambridge, Massachusetts.

Meffe, G.K., and C.R. Carroll. 1997. Conservation reserves in heterogeneous landscapes. Pages 305-343 in G.K. Meffe and C.R. Carroll and contributors. Principles of conservation biology. 2nd edition. Sinauer Associates, Sunderland, Massachusetts.

Taylor, P.D., Fahrig, L., Henein, K., Merriam, G. 1993. Connectivity is a vital element of landscape structure. Oikos, 68(3): 571-573.

BMBP5 - Contrary to the need to provide “recreational opportunities” and “ecosystem services”, this project will harm the values associated with recreational experiences, such as the natural character of the area. Logging and excessive roading do not appear natural, and will degrade the scenic quality as well as the overall recreational experience. Ecosystems services, such as water quality, will also be harmed.

Response – *The effects of this project on scenery are described in depth in the EA on*

pages 266-286. All action alternatives would maintain a range of Moderate to High Landscape Character and Scenic Integrity (Condition) and would meet the established Visual Quality Objectives of Partial Retention or Retention. In areas designated to Partial Retention VQO the visitor would perceive a natural appearing to slightly altered landscape viewed in foreground or middleground and would have moderate scenic integrity. In areas designated to Retention VQO the visitor would perceive a natural appearing landscape viewed in foreground and would have high scenic integrity. The proposed treatments would be consistent with Forest Plan Standards and Guidelines for Visual Quality (EA, page 286).

Effects to water quality are described in depth in the EA on pages 153-177. The East Face Project will not degrade water quality. Planning and application of BMPs will maintain or improve water quality. This includes monitoring of BMPs and effectiveness. None of the action alternatives will have an effect on stream temperature. With the exception of maintenance of closed roads, open and closed road reconstruction, culvert installation on closed roads, and culvert installation and removal on temporary roads, ground disturbing activities in the East Face project are away from streams and would not increase sediment delivery rates within the subwatersheds. RHCA treatments (that will benefit the RHCA) are restricted pre-commercial hand thinning, fuels reduction handwork, and hand piling and burning. A limited amount of draw bottom roads would be opened for project work in each action alternative. These temporary and closed roads will be properly closed (or maintained at an ML2 open road standard) after project activities are completed. Some amount of sediment will reach stream channels as a result of implementation of Alternative 2, 3, 4, or 5 but it will be short term in nature and occur only during project activities. The East Face Project is in accordance with the Clean Water Act and complies with the Clean Water Act requirements of the 1990 Forest Plan (EA, page 191).

BMBP6 - The East Face EA contains an overly narrow Purpose and Need, so construed as to preclude restoration alternatives that might include less aggressive logging and roading, or includes only non-commercial logging of small diameter trees. The overly narrow Purpose and Need predetermines selection of alternatives that inappropriately emphasizes heavy resource extraction.

Response – *The purpose and need for the East Face project was developed in a collaborative process with the Forest Service by the Wallowa Whitman Forest Collaborative (WWFC). The WWFC is an organization made up of a diverse group of people, agencies, and organizations interested in resource management activities on the Wallowa-Whitman National Forest. The WWFC membership includes representatives from industry, conservation organizations, regulatory agencies, natural resource advisory councils, local landowners, county governments, forest and fish/wildlife agencies, etc. The group came to consensus on this purpose and need and submitted it to the Wallowa-Whitman Forest Supervisor for consideration and use in the East Face project.*

BMBP7 - Environmental Assessments are intended to be concise documents; they are not meant to be geared to complex situations requiring long, detailed descriptions. If the project proposal is so complex that it cannot meet the goals of Section 1508.9, then an EIS should be prepared. A lengthy and complex EA, such as the one prepared for the East Face project, indicates that an EIS is needed.

The USFS must prepare an EIS if the project will significantly affect the quality of the human environment. An EIS should be prepared for the East Face project due to the high likelihood that

his project will significantly affect the human and ecological environments. Significance is likely due to such reasons as: the extremely large geographic scope of the East Face project, the likely significant negative effects to ESA species, potential downward trends or loss of viability for ESA, MIS, and sensitive and at-risk species, and the risk of significantly negatively affecting terrestrial and aquatic ecosystems and the species that depend on them. The EA disclosed determinations of “May Impact Individuals or Habitat” for multiple ESA species, as well as a determination for Bull trout of “May Affect, Likely to Adversely Affect bull trout or designated critical habitat for bull trout”. The EA did not include an analysis for the majority of the ESA species with an “MIIH” determination. The EA provided no evidence, rationale, or quantification upon which to base an overall determination that these MIIH determinations as well as the “likely to adversely affect” determination for Bull trout would not cause a loss of viability or a downward population trend. Similarly, the determination that the overall project will not significantly affect the human environment and therefore does not need an EIS is arbitrary and capricious, and lacks sufficient evidence, quantification, or justification. Additionally, the limited science used to justify claims of non-significance was cherry-picked, with large segments of current, expert, peer-reviewed scientific literature not considered.

Response – *The size of an environmental assessment (EA) does not determine if an EIS should be prepared or not. During the collaborative process and based on scoping results, the Responsible Official asked that five alternatives, including the No Action alternative, be developed and analyzed to respond to the issues submitted during scoping. Increasing the number of alternatives increases the amount of documentation needed to display the effects of implementing each of the alternatives.*

As per 40 CFR 1508.13, a Finding of No Significant Impact (FONSI) is a document by a Federal agency briefly presenting the reasons why an action, not otherwise excluded (1508.4), will not have a significant effect on the human environment and for which an environmental impact statement therefore will not be prepared. Refer to the FONSI in the EA on pages 291-293 which describes why this project will not have a significant effect on the human environment; therefore, an EIS is not required.

BMBP8 - The East Face EA inappropriately relies on mitigation measures to determine that impacts will not be significant. These mitigation measures do not have adequate enforcement mechanisms or regulatory strength, and are often subjective, voluntary, and only advisory. Mitigation measures should not be relied upon to avoid a determination of significance, and should not be used to avoid the preparation of an EIS. 40 C.F.R. § 508.8, 1508.27 notes:

- *If a proposal appears to have adverse effects which would be significant, and certain mitigation measures are then developed during the scoping or EA stages, the existence of such possible mitigation does not obviate the need for an EIS. Therefore, if scoping or the EA identifies certain mitigation possibilities without altering the nature of the overall proposal itself, the agency should continue the EIS process and submit the proposal, and the potential mitigation, for public and agency review and comment. This is essential to ensure that the final decision is based on all the relevant factors and that the full NEPA process will result in enforceable mitigation measures through the Record of Decision.*

Response – *The CEQ defines mitigation under Sec. 1508.20 as including:*

- (a) Avoiding the impact altogether by not taking a certain action or parts of an action.*
- (b) Minimizing impacts by limiting the degree or magnitude of the action and its implementation.*
- (c) Rectifying the impact by repairing, rehabilitating, or restoring the affected environment.*
- (d) Reducing or eliminating the impact over time by preservation and maintenance operations during the life of the action.*
- (e) Compensating for the impact by replacing or providing substitute resources or environments.*

There are no mitigation measures defined in the East Face project EA which are above or beyond the standard practices and design features used in all projects similar to this one. The mitigation measures and design criteria comply with parts (a) through (d) above and under no circumstances would (e) be required. In no situation were the effects with or without mitigation identified as having the potential to create significant effects. Project design and monitoring will ensure that project effects are within those described in the EA and comply with Forest Plan Standards and Guidelines.

BMBP9 - The best available current science that we have reviewed and cited shows that not only does legitimate scientific controversy exist, but also that the East Face project may have negative, unintended, and possibly significant impacts that were not adequately analyzed in the EA.

The East Face EA states, in relation to Bark beetles, that:

*In the East Face project area mountain pine beetle, western pine beetle, spruce beetle, fir engraver, western spruce budworm, and balsam wooly adelgid populations have shown an increase in activity the last few years. **Stands have pockets of beetle kill and recent attacks. Overstocked stand conditions increase the risk of further insect and disease activity.***

The EA failed to disclose or acknowledge legitimate scientific controversy regarding Bark beetles and the USFS's perceived need for logging in relation to beetle outbreaks.

Numerous peer-reviewed studies and expert opinions show scientific controversy and differing opinions and recommendations compared to those that the USFS put forth regarding Bark beetles. Bark beetle-related scientific controversy that the USFS left out of their analysis includes: the ecological benefits of Bark beetles for forests, that logging is highly unlikely to effectively control beetle outbreaks, and that thinning may actually interfere with long-term forest resilience to Bark beetles. Bark beetle outbreaks are driven by drought and heat, and current large-scale outbreaks are likely the result of climate change. This suggests that logging "treatments" for Bark beetles would have only limited, short-term perceived benefits that would require repeat entries and/or continual management to maintain.

For example, Diana Six is a Professor of Forest Entomology and Pathology at the University of Montana, and a leading expert on Bark beetles. The Forest Service, however, failed to take into account her research, as well as well-respected current research from several other scientists which contradict the USFS's assumptions about Bark beetles. The USFS has cherry-picked the research they used in the East Face EA in order to further more logging, and ignored the research, conclusions, and recommendations that run contrary the USFS's erroneous assumptions about Bark beetles.

Other researchers have also found evidence that thinning to reduce forest density in beetle-infected trees may actually interfere with long-term forest resilience to Bark beetles. For example, Fressenberg et al. (2014)...while this study focused on spruce, it and other studies listed here may have important implications for the USFS's misguided efforts to log as a means to forest density in forests being affected by Bark- beetles.

Response: *The project Silviculturist, two Forest Entomologists, and a Forest Pathologist all spent time together in the East Face project area to investigate insect and disease activities in the area. While the threat of bark-beetles was acknowledged, they were found to be at endemic levels at this time. There is however, increased activity within a few miles of the area, increasing the urgency of preventive treatment. The main point of the BMBP comments is that the FS failed to address the controversy of logging to control bark beetle outbreaks. This project is not within a bark beetle outbreak and does not propose to cut trees to control an outbreak and so these comments are not relevant.*

Outbreak suppression is not the objective of management. Managing stands by reducing stand density is aimed at reducing the risk of bark beetle attacks and reducing the risk of outbreaks developing. Thinning is a very well-documented, well-supported strategy to reduce risk of beetle attacks (Fettig et al. 2014; Fettig et al. 2014; Egan et al. 2010; Fettig et al. 2007; Bentz et al. 1993; Amman et al. 1988; McGregor et al. 1987; Larsson et al. 1983; Sartwell & Stevens 1975). Risk reduction happens both through increased vigor of remaining trees, and through altering the microclimate of stands to reduce beetle attack and survival (Amman and Logan 1998; Bartos & Booth 1994; Mitchell et al. 1983)

Within one stand they noted that “the lodgepole pine was about 8-12” in diameter and 100 ft²/acre, currently of the age, size, and density for high susceptibility to mountain pine beetle. A dominant lodgepole pine 11.4 inches in dbh was cored revealing 15 rings in the last inch of radial increment and a radial increment of 0.55 inches for the last 10 rings. Examination of the radial increment further substantiates the severely reduced diameter growth in recent years and the elevated risk to mountain pine beetle at this location.

There is some evidence that thinning lodgepole stands from below to 4 or 5 meter spacing or to 100 trees per acre will reduce susceptibility to mountain pine beetle attack (Amman and Logan 1998; Whitehead and Russo 2005). Thinning immediately alters the microclimate, increasing light intensity, wind and temperature to reduce beetle attack and survival (Amman and Logan 1998). Additionally, there is growing evidence of historical multiage lodgepole pine stands resulting from low- to moderate-severity fires (Keyes et al. 2014; Amoroso et al. 2011). Stand manipulations that increase the structural diversity will promote resilience to the projected increased disturbances with a changing climate.”

They concluded that lodgepole pine stands could be managed by lowering densities to reduce their susceptibility to beetles, where blowdown is not a concern; however, the purpose of the East Face project was never to “control” bark beetles. The effects analysis merely acknowledged the benefits gained (such as improving the health and vigor of the residual stand) from managing stand densities to improve stand survival in a beetle attack if it should occur.

Amman, G. D., McGregor, M. D., Schmitz, R. F., & Oakes, R. D. (1988). Susceptibility of lodgepole pine to infestation by mountain pine beetles following partial cutting of stands. *Canadian Journal of Forest Research*, 18, 688-695.

- Bartos, D. L., & Booth, G. D. (1994). *Effects of thinning on temperature dynamics and mountain pine beetle activity in a lodgepole pine stand*. INT-RP-479. Ogden, UT: USDA Forest Service, Intermountain Research Station. 9 p.
- Bentz, B. J., Amman, G. D., & Logan, J. A. (1993). A critical assessment of risk classification systems for the mountain pine beetle. *Forest Ecology and Management*, 61, 349-366.
- Egan, J. M., Jacobi, W. R., Negrón, J. F., Smith, S. L., & Cluck, D. R. (2010). Forest thinning and subsequent bark beetle-caused mortality in Northeastern California. *Forest Ecology and Management*, 260(10), 1832-1842.
- Fettig, C. J., Gibson, K. E., Munson, A. S., & Negrón, J. (2014). Cultural practices for prevention and mitigation of mountain pine beetle infestations. *Forest Science*, 60(3), 450-463.
- Fettig, C. J., Gibson, K. E., Munson, A. S., & Negrón, J. (2014). A comment on "management for mountain pine beetle outbreak suppression: Does relevant science support current policy?". *Forests*, 5, 822-826.
- Fettig, C. J., Klepzig, K. D., Billings, R. F., Munson, A. S., Nebeker, T. E., Negrón, J. F., et al. (2007). The effectiveness of vegetation management practices for prevention and control of bark beetle infestations in coniferous forests of the western and southern United States. *Forest Ecology and Management*, 238, 24-53.
- Larsson, S., Oren, R., Waring, R. H., & Barrett, J. W. (1983). Attacks of mountain pine beetles as related to tree vigor of ponderosa pine. *Forest Science*, 29(2), 395-402.
- McGregor, M. D., Amman, G. D., Schmitz, R. F., & Oakes, R. D. (1987). Partial cutting lodgepole pine stands to reduce losses to the mountain pine beetle. *Can. J. For. Res.*, 17, 1234-1239.
- Mitchell, R. G., Waring, R. H., & Pitman, G. B. (1983). Thinning lodgepole pine increases tree vigor and resistance to mountain pine beetle. *Forest Science*, 29(1), 204-211.
- Sartwell, C., & Stevens, R. E. (1975). Mountain Pine Beetle in Ponderosa Pine: prospects for silvicultural control in second-growth stands. *Journal of Forestry*, 136-140.

BMBP10 - The East Face EA failed to disclose or acknowledge legitimate scientific controversy regarding perceived risks from wildfire, or the numerous ecological benefits of wildfire. The East Face EA failed to disclose or acknowledge legitimate scientific controversy regarding fire regimes, historic range of variability of high-intensity fires and forest densities. Mixed-intensity fires that include large patches of high-intensity fire (ranging from hundreds to thousands of acres), are natural and occurred historically in mixed conifer and Ponderosa pine forests. In fact, mixed-intensity fire that including high-intensity patches generally dominated pre-fire suppression regimes historically in these forest types. In addition, fire intensity is not increasing in the great majority of western U.S. conifer forests. Most studies of current fire trends in western U.S. conifer forests have not found an increase in fire intensity, and studies are mixed on whether fire will increase, or decrease, in future decades as a result of climate change, depending upon the modeling assumptions used (e.g., hotter and drier versus warmer and wetter). Also, patches of high-intensity fire create some of the best, most biodiverse wildlife habitat. Logging to introduce frequent, low severity fire in forest types that are historically subject to mixed and high intensity infrequent fire negatively effect native flora and fauna that evolved with and are adapted to infrequent mixed and high severity fires. This is particularly true of cool moist conifer and cold dry Lodgepole pine forests.

Response – *We agree that fire is a natural part of the forces that shape a landscape (reference EA pages 9-11). The intent of this project is to create and maintain strategically located fuel reduction areas which “compartmentalize” the project area and reduce the potential size of a wildfire, not eliminate it. Given the types of potential vegetation groups within this project area and their juxtaposition to private land interface areas, WUIs, and vast acres of inventoried roadless areas, fire managers are seeking to successfully utilize and manage fire on the landscape that are hundreds of acres in size instead of thousands of acres in size in order to not only create the heterogeneity desired but also to continue to provide recreation*

opportunities, habitat for endangered species, water for agricultural needs, and protect private lands and facilities.

The principles that guide the fuels reduction treatments come from the Cohesive Wildfire Strategy (EA page 1). The intent of the mixed and high severity fire regime treatments is to create and maintain strategically located fuel reduction areas (DFPZ's). Departures from "historic fire return interval" or "ecological need" were not identified as a reason for treatment in high severity fire regimes. The fuels reduction treatments in mixed and high severity fire regimes are based on the need to reduce existing fuel loadings and the associated fire behavior to desired conditions (reference EA pages 73, 80-82 and Fire Behavior Appendix).

We agree that fire plays a vital role in ecological functions and this project does not aim to remove fire from the landscape. Our desired future conditions (refer to EA page 4) is for fire to play a role in creating ecologically resilient forest conditions. "It is desired that fire regimes return to within or near to their historical range of frequencies (in years) within the project area and exhibit fire behavior, effects and other associated disturbances similar to those that occurred prior to fire exclusion (suppression) reducing the risk of loss of key ecosystem components." With the recognition that past management activities have resulted in unnatural densities of small diameter trees, treatments aim to create conditions that will allow fire to return to the landscape without putting an entire watershed at risk. We recognize the important role that stand replacing fires play within the mature forests. However mature stands and large trees remain a limiting factor on the landscape in many places and are important areas of travel and breeding for many species. Treatments proposed adjacent to these stands aim to allow fire back onto the landscape in a way that would allow mixed and high intensity fire to play a role on the landscape without putting landscape connectivity for old growth dependent species at risk.

BMBP11 - The East Face EA failed to disclose or acknowledge legitimate scientific controversy regarding thinning in riparian areas and threats to aquatic and riparian ecosystems due to logging and roading. Logging, including thinning, may harm riparian terrestrial and aquatic systems to which native species, populations and communities are uniquely adapted. Thinning may degrade habitat and impair survivability of native plant invertebrate and vertebrate riparian-dependent species. Information and analyses in the EA may not accurately reflect true historic range of variability for stand structure or fire regimes. Density reduction is inappropriate in many riparian areas, particularly in stands that are mixed conifer and Lodgepole. The following citations are from studies showing that thinning may harm aquatic resources. These studies show risks that were not adequately analyzed. At the very least, they show scientific controversy as well as uncertainty about the significance of effects from thinning and fuels reduction projects to riparian and aquatic systems.

Flaspohler, D., Fisher, C., Huckins, C., Bub, B., and Van Dusen, P., (2002). Temporal patterns in aquatic and avian communities following selective logging in the Upper Great Lakes Region. Forest Science, 48(2): 339–349.

***East Face Response -** This is not relevant nor is it best available science for the East Face Project Area. This study is on logging hardwood forests in Michigan's Upper Peninsula, an extremely different environment and forest condition than what is analyzed in the East Face EA. Study area consisted of an area on Michigan's Upper Peninsula (western Upper Peninsula) at an elevation of 260-355m where dominant species are*

sugar maple, eastern hemlock, American basswood, yellow birch and red maple.

In addition, Forest Service is not logging in RHCAs in East Face. The only treatments occurring in RHCAs in East Face are to improve stand conditions, resiliency, health, and growth of dominant trees for LWD recruitment and to maintain and improve shade and bank stability. In addition, although the BMPs applied in their study plots designated retention of a 30 m riparian buffer, tree removal was allowed within buffers as long as wheeled vehicles do not enter the buffer, East Face has defined RHCA buffers that have no entry.

Hemstad, N.; Merten, E.; Newman, R.; 2008. Effects of riparian forest thinning by two types of mechanical harvest on stream fish and habitat in northern Minnesota. Canadian Journal of Forest Research, 2008, 38(2): 247- 256.

East Face Response - *This is not relevant nor is it best available science. This study is from the mid-west (Minnesota), uses mechanical treatments to harvest trees, harvests trees in “riparian management zones” (RMZs), and reduces canopy cover, none of which apply to East Face (hand treatment only limited entry into RHCA buffers to improve stand condition and tree growth in East Face). In addition, their findings are that “riparian thinning in a 30m buffer, using either CTL or TL, can be an effective forest management tool without having adverse effects on stream habitat or fish when short (<200 m) reaches are harvested,” so BMBP should realize that this article that was provided as BAS supports mechanical treatment in riparian zones.*

The East Face project does not commercially harvest in RHCA buffers, use any type of mechanical treatment in RHCA buffers, treat riparian areas with no regard to minimum “no activity buffers” to protect the stream, or reduce canopy cover. This is not BAS and does not apply to East Face project.

Hutto, R. L. 2008. The ecological importance of severe wildfires: Some like it hot. Ecological Applications 18:1827–1834.

East Face Response - *Not relevant to fish/water. A lot of this article is on historical stand conditions versus treatment to “restore” “natural” stand conditions, no connection to fish or aquatics in here, looks like avian species study on the Black-backed Woodpecker in Idaho and Montana.*

Lecerf, A. and Richardson, J. (2010). Litter decomposition can detect effects of high and moderate levels of forest disturbance on stream condition. Forest Ecology and Management, 259 (2010) 2433–2443.

East Face Response - *Findings in this article challenge the commonly held assumption that the maintenance of riparian reserves minimizes ecological effects of clearcut logging on stream ecosystems.*

This is a good study on litter decomposition as a functional indicator and the response found in stream ecosystems that correlates leaf litter, benthic invertebrates and adjacent uplands (outside of riparian reserves). However, it does not apply to East Face Project since clearcut logging will not occur (and even HSH commercial harvest units do not have RHCAs in them, and litter decomposition in streams would not be affected by the management of units in this project area. Cover/canopy is being maintained in all RHCAs

following PACFISH/INFISH standards and guidelines (1995). No leaf litter in the riparian area canopy is being removed. No activities would occur within one site potential tree height in RHCA buffers.

Pilliod, David S.; Bull, Evelyn L.; Hayes, Jane L.; Wales, Barbara C. 2006. Wildlife and invertebrate response to fuel reduction treatments in dry coniferous forests of the Western United States: a synthesis. Gen. Tech. Rep. RMRS-GTR-173. Fort Collins, CO: U.S. Department of Agriculture, Forest Service, Rocky Mountain Research Station. 34 p.

East Face Response - This study concludes that there are data gaps in effects of fuels reduction treatments on wildlife and invertebrates, that more short and long term responses need to be monitored and may treatments are still “experimental”, considerations need to include landscape setting, management history etc., emphasizes ecosystem management over single species management and discusses the importance of retaining critical habitats including large diameter down wood and snags. East Face project stand treatments are aligned with this study and effects of fuels reduction on specific stands and units and wildlife in the proposed project are analyzed in the EA. Snag retention is included in stand treatments and prescriptions.

This article relates to wildlife/silviculture/fuels and does not relate to water aquatics.

Pollock, M., Beechie, T., and Imake, H. (2012). Using reference conditions in ecosystem restoration: an example for riparian conifer forests in the Pacific Northwest. *ESA journal*, 3(11): 98.

East Face Response - The location of this study was western Washington and western Oregon in douglas fir dominated forests <1000m elevation, where conditions are very different than East Face project area on the Wallowa Whitman National Forest in eastern Oregon. The study concluded that in mature forests, stands (that met the study criteria) that were untreated (not thinned) followed a trajectory toward developing forest structure similar to average reference condition and that “treated” (thinned) stands followed a developmental trajectory along the outside range of reference conditions. The recovery timeline for untreated stands was considered 100 years in this study. Stands were thinned to 150 trees/acre in this study.

The four recommendations in the study are

1. Identify reference conditions
2. Use metrics that describe ref conditions
3. Use models to predict effects of management actions
4. And use adaptive management, monitoring and implementation to reach desired goals/conditions.

The Forest Service used stand exams to get the existing conditions of the stands and follows historic range of variability (which is equivalent to getting at “reference conditions” as described in this article) for stand treatments to reach desired goals as described in the Forest Plan. In addition, our stand treatments and treatments in riparian areas in East Face project area are site specific and are treating heavily overstocked second growth stands that are lodgepole pine dominated and in a state of reduced stand health and vigor and as such are at risk of unnatural levels of future mortality from susceptibility to insect or disease epidemics and stand replacing wildfires.

Stand density is one of the most important factors influencing certain insect populations; dense stands increase tree competition, which increases stagnation and development of a suppressed class of trees, which has been shown to increase the chance of outbreaks (Scott 1996).

Due to the history and current dense stand condition, potential vegetation groups (PVG) within the project area are predominantly in the understory reinitiation, stem exclusion, and stand initiation structural stage. In order to move these stands out of understory reinitiation and on to old forest structures stand densities will be managed to reduce competition and improve tree health and vigor.

According to the Intergovernmental Panel on Climate Change, there has been a clear pattern of temperature increases and long-term trends in precipitation changes (Kimbell 2007). The panel concludes that disturbances from pest, disease, and fire are projected to have increasing impacts on forests. It is projected that environmental changes from global warming may create forests that are more susceptible to abnormal scales of disturbance (Millar et al. 2007) such as extreme insect and disease outbreaks and stand destroying wildfire.

Kimbell, A. Statement Before the US House of Representatives Select Committee on Energy Independence and Global Warming. Concerning Wildfire and Climate Change. Nov. 1, 2007

Millar, C. I., N.L. Stephenson, S.L. Stephens. 2007. Climate Change and Forests of the Future: Managing in the Face of Uncertainty. Ecological Applications 17 (8): 2145-2151.

Scott, Donald W. 1996. A Rationale and Procedure For Determining Imminent Susceptibility Of Stands To Insects In the Blue And Wallowa Mountains Of Southeastern Washington and Northeastern Oregon. USDA. Forest Service. Pacific Northwest Region. Blue Mountains Pest Management Zone. BMZ-96-15. 17pp.

Pollock, M. and Beechie, T. 2014. Does Riparian Forest Thinning Enhance Forest Biodiversity? The Ecological Importance of Downed Wood. Journal of American Waters Resource Association (JAWRA) 50(3): 543-559.

East Face Response - Good article and East Face retains standing large diameter trees in project area. Note that the scenario in this study, which is west of the Cascades in Douglas-fir forests are very different than the conditions in the East Face project area where degraded riparian areas are stands of small lodgepole pine trees that are very dense and pose risk of stand replacing wildfire (page 6-8, 17-18, 24 EA, photo page 11).

Siuslaw River Basin in the Willamette National Forest, where trees were planted after clearcut and stand density averages 558 trees/ha and post treatment averages 147 trees/ha. Lodgepole dominated stands in East Face Project area proposed for treatment have 500-2500 stems (trees) per acre and would be thinned to 175-220 stems per acre.

Reiman, B.; Clayton, J.; 1997. Wildfire and Native Fish: Issues of Forest Health and Conservation of Sensitive Species. Forest Service, Rocky Mountain Research Station.

East Face Response - The Forest Service agrees with the concepts and recommendations in this article. East Face project is not contradictory to what is discussed in this article. The Forest Service takes a conservative and low risk approach to fuels reduction and PCT thinning in riparian areas and minimizes risk by hand thinning

only in PACFISH/INFISH RHCA buffers so that no machinery operates within buffers causing deleterious effects to soils, water, and fish. In addition all riparian treated areas have a “no activity buffer”, so that areas adjacent to the stream are undisturbed, no canopy cover is removed, and the risk of sediment to the stream is minimized. In addition, the Forest Service follows recommendations in this article on using site specific information to determine treatments and prescriptions for specific stands. In addition, this article compares fire and management-related disturbances such as logging and road building and “intensive management.” The thinning proposed in RHCA buffers to improve stand health and resiliency in East Face is low-risk and not qualified as “intensive management” that the agency is doing “in haste” because of biological communities or sensitive species that are “at risk.”

The goal is two-fold, to address overstocked, dense stands and address the fuels and to thin stands to a more historical pre-human disturbance, where conditions improve riparian and stream function and meet riparian management objectives.

Robertson, B. and Hutto, R., 2007. Is selectively harvested forest an ecological trap for Olive-sided flycatchers? *The Cooper Ornithological Society, The Condor* 109: 109-121.

East Face Response - This article is not related to aquatic habitat or species.

Windom, M. and Bates, L. 2008. Snag density varies with intensity of timber harvest and human access. *Forest Ecology and Management* 255(7) pp. 2085- 2093.

....Our findings demonstrate that timber harvest and human access can have substantial effects on snag density. Meeting snag objectives for wildlife will require careful planning and effective mitigations as part of management of timber harvest and human access.

East Face Response - All snags >12” dbh are being retained on site, EA page 25.

Wood PJ, Armitage PD. 1997. *Biological Effects of Fine Sediment in the Lotic Environment. Environmental Management.* 21(2): 203–217.

East Face Response - East Face Project discloses causes of potential short term sediment into stream channels and effects of influx of sediment into stream corridors associated with project activities. The findings in this literature were already considered and incorporated into effects analysis. BMPs and design criteria such as no mechanical entry into RHCA buffers (hand treatment only where RHCA buffers are treated to improve stand condition), minimizing use of draw bottom roads for project access, minimal construction of temp roads in RHCA buffers (0-.44 miles depending on alternative) and limiting log haul in stream draw bottoms.

Non-treatment of stands and RHCAs could increase sediment yield to stream channels above existing levels due to an increase in fire intensity. Appropriate stocking levels can help to increase tree growth and increase resistance of stands to fire, insect, and disease (Lambert, 1994) (from Trail) Lambert, Michael B. 1994. *Establish Stable Stand Structures And Increase Tree Growth: New Technologies In Silviculture.* In Volume 4: *Restoration of Stressed Sites, and Processes.* Pacific Northwest Research Station. General Technical Report. PNW-GTR-330. 123pp

RESPONSE: Controversy regarding riparian thinning is largely over the benefits of

thinning versus letting a previously managed (ie logged) stand recover without thinning treatments and associated “risks” tied to treating a stand and the methods used to expedite recovery to natural conditions versus no treatment versus the “risk” of no treatment.

The only perceived “threats” alluded to in this comment would be using machinery in RHCA, removing canopy cover, which could affect stream temperature, or thinning within one site potential tree length, which could affect temperature and large wood recruitment. The East Face Project does not propose using machinery in RHCA buffers (hand treatment only), does not propose removing any overstory vegetation (canopy cover), and leaves “no activity stream buffers” on all RHCA so that site potential tree height is reserved for trees that fall to reach the stream and all trees within that buffer. RHCA treatments are based on the most current science on microclimate. The only citations listed by BMBP that show signs of negatively affecting aquatic resources were mechanical thinning in riparian zones and not leaving adequate buffers, although one article cited by BMBP, Hemstad et al 2008, actually concluded that mechanical thinning within a 30m buffer...was an effective management tool, without having an adverse effect on stream habitat or fish when a short (<200m) reach was harvested. BMBP does provide literature supporting controversy over benefits or adverse impacts from riparian thinning. However, BMBP comments overlook information provided in East Face where site specific information collected during stand exams regarding existing conditions of overstocked lodgepole pine dominated stand conditions which have resulted in reduced levels of larger diameter trees and increased amounts of smaller understory trees (page 6-8, 17-18, 24 EA, photo page 11) and the need for treatment (riparian stand health, fuels reduction) was described.

Treatments within riparian areas are restricted to precommercial thinning by hand of small diameter (generally less than 7 inches dbh) conifer trees. No activity buffers of 10 feet along class IV streams (intermittent non-fishbearing), 30 feet on class III streams (perennial non-fishbearing), and 50 feet along class I streams (fishbearing) would be adhered to in treatment design. Slash may be left on site or hand piled outside of the no activity RHCA.

As described in the EA on page 167, “A study conducted by Madrid et al. (2006) evaluated three silvicultural treatments, which are 1) untreated control, 2) precommercial thin with slash piled, and 3) precommercial thin with slash scattered. Treatments were done by hand. Fuels reduction and thinning within RHCA in the East Face project are similar to the treatment described in number two above, precommercial thin with slash piled. Ground disturbance in the pile treatment ranged from no ground disturbance to slight roughing of the litter with slight exposure of mineral soil where slash was hauled to piles. Sediment yield was statistically different and greater on pile and scatter treatments than the untreated control or thin and pile treatments during wet runs (precipitation). Median sediment yield for the untreated control was 0.36 kg ha⁻¹, thin and pile treatment was 0.83 kg ha⁻¹, and the thin with slash scattered was 0.90 kg ha⁻¹. Sediment yield for both treatments was still very low and within erosion rates of undisturbed forested watersheds. Studies have reported that undisturbed forested watersheds have erosion rates from near 0 to 560 kg ha⁻¹ (Binkley and Brown, 1993). Median values modeled for both dry and simulated storm events were below 2 kg ha⁻¹. The values for thin and pile are very close to zero and well within background levels for erosion rates of undisturbed forested watersheds. Amount of sediment generated by this activity is not measurable since the values described above are very close to zero and are the background levels of natural sediment yield in undisturbed forested watersheds. The study concluded that infiltration rates, runoff rates, and soil moisture content did not differ among treatments.

Best Management Practices monitoring on the La Grande Ranger District supports these research findings. Mechanical treatment in RHCA's in the Starkey and Horsefly Vegetation Management Projects found that there was no offsite movement of sediment, no sediment movement through the no-treatment stream buffers of 50 feet on perennial and 30 feet on intermittent streams, and no sediment yield to stream channels. This was mechanical treatment. Hand treatment results in minimal to no ground disturbance, does not compact soils, and would result in very small amounts of sediment that would not be measurable above background levels. With handwork there are no skid or shovel trails that cross streams or any other mechanical ground disturbance. The stream buffers described for hand treatment allow optimum hand treatment of the RHCA with no risk of adverse effects to listed fish or designated critical habitat."

The Forest Service acknowledges and discloses direct and indirect effects of road-related impacts including use of temporary roads, and crossings to aquatic and riparian ecosystems on pages 159-162 and 170-175 and 178-180 and 183-185 in the EA. None of the literature cited by BMBP was specific to roads, Wood and Armitage 1997 discuss it road briefly as they related to fine sediment.

BMBP12 - The East Face project, if implemented, may negatively effect existing snags which may be felled accidentally or because of safety hazards, as well as negatively effect future large snag recruitment. Snags have lower densities after thinning. Consequently, many snag-dependent species are negatively affected. American marten and Black-backed habitat, for example, would be negatively affected by proposed thinning in cool-moist mixed-conifer forests in riparian and uplands within the project area. Numerous studies have found negative impacts from thinning in riparian areas, even when snags removal is not intended. For example, Polluck et al. (2012) found that selective logging may cause riparian forests to develop characteristics outside of normal late seral conditions in reference stands. Pollock and Beechie (2014) study found that: "[s]pecies that utilize large diameter live trees will benefit most from heavy thinning, whereas species that utilize large diameter deadwood will benefit most from light or no thinning. Because far more vertebrate species utilize large deadwood rather than large live trees, **allowing riparian forests to naturally develop may result in the most rapid and sustained development of structural features important to most terrestrial and aquatic vertebrates.**

Response – *Because all work in riparian areas will be small diameter materials and done by hand safety trees will not be an issue. On Forest Service lands all snags greater than or equal to 12 inches are being retained in this project (EA, page 25). No riparian treatments are proposed on BLM lands. Effects to snag and log habitat is described on pages 191-200 in the EA.*

BMBP13 - In addition, variability in stream temperature should be monitored, analyzed, and incorporated into relevant models and project designs. Best Management Practices should be reevaluated and modified to ensure that stream temperature variability is not altered beyond thresholds for Bull trout and other at-risk and aquatic species. Stream variability needs to be analyzed and mitigated against in regard to climate change. Key findings for Stream Temperature Variability: Why It Matters To Salmon by Steele, A. and Beckman, B. (2014) at the PNW research station include:

"Commonly used degree-day accumulation model is not sufficient to predict how organisms respond to stream temperatures. Changes in how the degree days are delivered have the potential to alter the timing of life history transitions in Chinook salmon and other organisms.

Emerging from the gravel a few days earlier or later could directly affect their survival due to changes in available food resources, competition for feeding grounds, or strong currents”

“Decision makers often apply landscape models to identify freshwater management priorities for conservation and restoration planning and to predict future species distributions; incorporating stream temperature variability into calculations may improve these models.”

“Fisheries management during a changing climate might be improved by considering genetic predispositions that could lead to increased risk of resilience, particularly for endangered species”

“Monitoring freshwater temperature is essential for managing fish and other aquatic organisms. This study provides a rationale for collecting and archiving hourly information, instead of simply mean or maximum daily temperature”

Response – *The Forest Service uses temperature standards for the East Face project required by Oregon Department of Environmental Quality (ODEQ) state water quality standard, which is based on the maximum 7-day running average. Temperature standards were developed based on temperature requirements of salmonids during different seasons and life stages (East Face Fisheries and Watershed Existing Conditions report page 3). The Forest Service is monitoring and analyzing stream temperature on the eight sites on the project area (see East Face Fisheries and Watershed Existing Conditions report) where temperature monitors collect data every hour.*

See Pages 25-26 of Fish Water Effects Resource Report, and 165-166 EA. Because we are maintaining and improving riparian conditions through our stand improvements in units with RHCA buffer treatments, temperature and sediment would be maintained or improved by canopy cover growth and stands would more closely resemble the historical range of variability, which would provide the best defense against a changing climate. See discussion in EA about the importance of microclimate in ecosystem management and its influences on biological processes and physical processes.

From the EA page 165-166...stream buffers widths are also based on the riparian microclimate in the Blue Mountains of Oregon. Microclimate is an important element of ecosystem management as it influences biological processes such as primary production and decomposition, and the physical environment determining habitat suitability for many organisms (Chan et al. 2004).

Danehy and Kirpes (2000) found that the riparian microclimate gradient on four perennial streams in the Grande Ronde Basin of eastern Oregon extended no more than 10 meters (30 feet) from the edge of the stream channel into the upland forest. Beyond 10 meters humidity was similar to upland conditions. Indian Creek, a perennial stream in the Upper Grande Ronde River, was one of the study streams and has similar habitat conditions to many of the streams within the East Face area. The minimum RHCA stream buffers would protect the riparian microclimate, which includes stream temperature.

A study conducted by Chan et al. (2004) on four different buffer widths with upland density management (thinning) suggest that riparian buffers of various configuration results in relatively small changes in the riparian climate. Buffer widths in the study were 1) streamside retention (less than 25 feet), 2) variable width (about 57 feet), 3) one site

potential tree width (about 201 feet), and 4) two site potential tree widths (about 400 feet). The study involved small headwater streams, and results of the study found that the area between the stream and 15 feet lateral distance from the stream is uniquely riparian with respect to microclimate. This 15 foot zone is remarkably resistant to microclimate changes from upland thinning treatments.

A study conducted by Wilkerson et al. (2006) in headwater streams in Maine found that 11 meter (36 feet) buffer widths with clearcuts on either side and partial harvest within the buffer had moderate, but statistically insignificant increases in stream temperature while 23 meter (76 feet) buffer widths with clearcuts on either side and partial harvest in the buffer had no observable increases in temperature. Both treatments retained >60% of the canopy. Moore et al. (2005) found that temperature increases in headwater streams are unlikely to produce substantial changes in the temperature of larger streams into which they flow, unless the total inflow of clear-cut heated tributaries constitutes a significant proportion of the total flow in the receiving stream. No clearcut or regeneration harvests are proposed along perennial streams and no harvest is proposed within no activity buffers. All shade producing vegetation will be retained within no treatment buffer, and a fully stocked stand will remain beyond the buffers to provide stream shade.

Based on the above studies, no activity stream buffers would prevent or minimize sediment yield resulting in a non-measurable amount of sediment reaching the stream, and would not result in an increase in stream temperature.

BMBP14 - The East Face EA contains an insufficient effects analysis. The EA failed to quantify potential impacts to listed, sensitive, or MIS species such as the Columbia spotted frog; Rocky Mountain tailed frog; Redband trout; Bull trout, Lynx; wolverine, Gray wolves; Pacific fisher; American marten; Mule deer; Rocky mountain elk; Fringed myotis; Black-backed woodpeckers; PCE's; Northern goshawk; other accipiter hawks; other raptors present within the project area (especially those that rely, at least in part, on forest density); Johnson's hairstreak butterfly; Fir pinwheel; and sensitive and listed botanical species. The EA failed to analyze the actual effects to each species' viability in the East Face project area. Many of these species only received one or two passing mentions within the EA. Rationales, explanations, or justifications were not given for most of these species regarding the EA's determination that this project would not significantly affect most of these species or their habitats. The EA also did not adequately describe the quantity or quality of the habitat needed to maintain viable populations of the majority of these species.

The scale of the effects analysis was inappropriate for a number of species and issues, including but not limited to Black-backed woodpeckers, road densities, and cumulative impacts. In addition, open road densities are not adequate or appropriate for many effects analyses, such as cumulative effects analyses or analysis of effects for certain wildlife and fish species. All roads, including close and "temporary" roads should be included in these analyses.

Response – *Please refer to the Biological Evaluation contained within the project record for further analysis of Region 6 sensitive and listed species. Black-backed woodpeckers were analyzed at the scale necessary to run a DecAID model, which is considered best available science for primary cavity excavators (Mellen-McLean et al. 2012).*

BMBP15 - The EA did not adequately disclose impacts due to grazing, particularly information regarding existing conditions, or synergistic and cumulative effects with proposed logging.

Response – *Refer to Appendix D of the EA for complete description of all present and reasonably foreseeable future activities within and adjacent to the analysis area. This also contains an analysis to determine which of these activities overlap in time and space with the analysis area for each resource and if there would be a measureable effect on that resource from the activity when combined with actions proposed in the East Face action alternatives. If the activity overlapped in time and space and would have a measureable cumulative effect that effect was analyzed by the resource specialist and was carried forward into their analysis report and displayed in the EA. Domestic livestock grazing was included in this analysis.*

BMBP16 - The East Face EA contains an inadequate cumulative impacts analysis. For example, the EA fails to look at potential re-entries into thinned stands (both commercial and non-commercial) in order to maintain the short-term perceived benefits derived from fuels reduction. If re-entries are not planned, then the EA should have disclosed that potential effectiveness of fuels reduction efforts are short-lived, and considered the trade-offs of the risks involved against such short-term perceived gains.

Timber sales in the area that have occurred in the recent past, or are currently planned, or will be proposed in the foreseeable future were omitted from cumulative effects analysis. These projects are relevant to potential “death by a thousand cuts” scenarios, and should be included in a cumulative effects analysis.

Response – *Refer to page 2 of Appendix D of the EA. The cumulative effects analysis includes past (which have been incorporated into the existing condition), present, project activities, and reasonably foreseeable future activities. Reasonably foreseeable future activities were defined for this project as those which may occur within the next 5 years. Experience on the Wallowa-Whitman has indicated that predictions for future resource management activities are generally accurate 5 years for 5 years out; however, beyond that time frame they are less predictable due to changing forest conditions, priorities, etc.*

Any entry into a commercial or non-commercially treated stand in East Face for piling, burning, or follow-up precommercial thinning (in commercial harvest units) are described as a part of East Face project activities (Refer to treatment unit data tables in EA Appendices A-C for details on post-harvest/treatment activities proposed). There are no additional re-entries planned within any of these units within the next 5 years; therefore, they were not considered in the cumulative effects because they were not reasonably foreseeable.

The effects of timber sales that occurred within the area in the past were incorporated into the existing condition for each resource. Present and reasonably foreseeable future timber sale activities are described on pages 3 and 7 of Appendix D and were considered for each resource (refer to tables in Appendix D pages 8-45).

BMBP17 - The East Face EA contains an inadequate range of alternatives. The East Face EA should have included alternatives that offered a less intensive resource extraction and vegetation manipulation, and met the purpose and need without such ecologically damaging logging and roading activities. The EA should have included alternatives such as those that did not amend the Forest Plan, that only included non-commercial logging, and that did not include thinning in RHCA's.

Response – *The range of alternatives is a direct response to the public comments received during scoping of the proposed action. As a result of the public comments, numerous issues were resolved in project design (EA, page 17-18), an additional four were considered but not in detail because they did not meet the purpose and need for the project (EA, page 19), and five alternatives were developed (including the no action) and fully analyzed to respond to the key issues raised during scoping.*

No public comments recommended non-commercial treatments only within the project area. Not treating in RHCA buffers was considered but as described on page 18 of the EA, the non-commercial RHCA treatments are primarily in past harvest units which would benefit from some density management to maintain their health and vigor.

Alternative 3 responds the most to the concerns you raise. It concentrates treatments in the highest priority areas (WUI's and private land interface areas), calls for only non-commercial treatments outside of those areas, and does not use any temporary road construction (EA page 32-33). It would only amend the forest plan for non-commercial fuel reduction treatments in backcountry (MA6).

BMBP18 - We are opposed to the use of site-specific Forest Plan amendments. The use of site-specific Forest Plan amendments, as proposed in the EA, circumvent Forest Plan direction and are in violation of the Forest Plan. If the USFS believes, for example, that Grand fir are overstocked throughout the forest and that increased forest density and increased risk of high-intensity fires are problematic throughout the forest, then the USFS must do a forest-wide significant amendment to the Eastside screens, including a science-based, peer-reviewed analysis of this issue, and of the potential ramifications of “treating” this issue. A forest-wide significant amendment must also analyze the cumulative impacts of the proposed Eastside Screen amendment along with all other past, present, and reasonably foreseeable site-specific/project-specific Amendments.

The Wallowa-Whitman has approved numerous project-specific amendments to the Eastside Screens since they were adopted. The recent Snow Basin 9th Circuit court case found that the USFS's use of site-specific amendments to be in violation of NFMA because the USFS failed to demonstrate unique characteristics within the project area that would justify a site-specific amendment, and to explain what conditions existed within the project area that supported selection of a site-specific amendment over a forest-wide amendment. Id at 54-55. The Court also ruled that the Forest Service's failure to analyze other similar site-specific amendments throughout the Wallowa-Whitman violated the requirement to take a “hard look” under NEPA. Id. at 17-18. The East Face EA's proposed Forest Plan amendments do not address site-specific issues. The EA also does not adequately analyze the cumulative effects of repeatedly utilizing these site-specific Forest Plan amendments. For example, the EA failed to analyze the cumulative impacts related to multiple site-specific Forest Plan amendments to log within Allocated Old Growth areas in recent and currently proposed timber sales, including in the Lower Joseph Creek Restoration Project, Little Dean Vegetation Management Project, and Mt. Emily Fuels Reduction Project. The repeated use of site-specific amendments to log in Old Growth areas using the same justification (fuels reduction and modifying fire regimes) shows that the amendments are addressing a regional perceived problem rather than site-specific problems. Please see League of Wilderness Defenders, et al. v. Connaughton, et al., No. 3:12-cv-02271-HZ (D. Or. Dec. 9, 2014). Until a forest-wide amendment is enacted, site-specific Forest Plan amendments attempting to address

forest- wide perceived problems should not be proposed as part of individual projects.

We are very concerned about proposed site-specific amendments to violate Forest Plan standards for visual impacts to scenic corridors, logging in Allocated Old Growth (MA15), logging in LOS below HRV, and logging in MA6 backcountry recreational areas. Logging in units that utilize site-specific amendments in order to circumvent Forest Plan direction should be dropped, including in units: 199, 129, 131 (logging in LOS below HRV), all logging in unit 134 (MA15), and units 138, 139, 307, 309-312 (MA6).

Response - *Section 1 of the proposed Forest Plan Amendment (EA page 26-27) is site specific because the four LOS stands (totaling 97 acres) proposed for fuel reduction work have 4 location-specific concerns not found in any of the other amendments previously completed on the Wallowa-Whitman National Forest. These stands are located within or immediately adjacent to the Anthony Lakes and Rock Creek Bulger Flats WUIs (which contain numerous homes, buildings, and developed facilities), adjacent to 20 miles of private land interface, are very close to or immediately adjacent to a State Scenic By-way, and are immediately adjacent to the Twin Mountain inventoried roadless area. None of the other forest plan amendments done on the forest (refer to Appendix D, pages 12-13 which describes every LOS Forest Plan Amendment on the WWNF) have this same site specific need for fuel reduction work to retain the integrity of the defensible fuel profile zones (DFPZs) proposed in this project.*

The cumulative effects of this proposed forest plan amendment was completed at the Forest level (refer to Appendix D, pages 12-13 and EA pages 104-106) and included all past, present, and reasonably foreseeable future forest plan amendments on the WWNF for treatment in LOS below HRV.

Refer to the response to Hells Canyon Preservation Council Comment HCPC12 related to Section 2 of the proposed Forest Plan Amendment.

BMBP19 - We are opposed to the conversion of multi-strata old forest to single-strata. Rationales for this conversion have not been adequately vetted, are scientifically controversial, and are harmful to many wildlife species. In addition, repeated Forest Plan amendments to allow for this conversion are inappropriate, and violate the Forest Plan.

Response – *The decline of single story old forest has been well documented as have its effects on open forest dependent species (Garret et al. 1996, Sallabanks & Arnett 2001, Wisdom et al. 2000). Past timber harvest, fire exclusion and grazing have resulted in altered forest structure and changed tree species composition, resulting in a higher density of small diameter trees and fewer large diameter trees (Harrod et al. 1999). The result of this has been a decline in the populations of open, old-growth ponderosa pine dependent species such as the white-headed woodpecker and the flammulated owl (Altman 2000). One component of the purpose and need of the project is to restore and promote forest structural and compositional conditions reflective of historic ranges of variation (refer to EA page 7). HRV analysis shows drastically reduced old forest single story habitat within the project area (Refer to EA page 13). Part of meeting this purpose and need is identifying areas where it would be ecologically appropriate to promote open, old-growth conditions using methods that several studies have found to be effective in promoting avian diversity (Altman 2000, Gaines et al. 2007, 2010, Mellen-Mclean*

2013).Promotion of the open, old-growth stand structure will not bring any other structure type below HRV (Refer to Table 44. Comparison of Old Growth Stand Structure to HRV after Proposed Treatments page 104).

BMBP20 - The East Face project does not adequately protect soils. PDCs and BMPs are largely voluntary, subjective, and/or not sufficiently enforced or adequately effective. Post- project mitigation does not have clear timelines or funding sources, and may never happen.

Logging should not take place on steep slopes, frost pockets, highly erosive soils, or other areas where soils are particularly sensitive or prone to erosion. In discussing soils located in undeveloped areas, the EA states: “[s]oils within this identified area are primarily volcanic ash over decomposed granitics (Landtype associations 131, 132, and 156). They are highly erosive resulting in areas with gully/rill erosion and lost surface vegetation on steep slopes. Refer to the soils analysis for more information on these soil types.” Logging should not take place on soils highly prone to erosion, particularly not in undeveloped lands.

Response – *Best Management Practices are identified within the contractual agreement with the purchaser and are monitored for compliance by the Forest Service sale administrator during the removal period (Soils report page 12 and 15. Units with higher potential for soil erosion were identified during the analysis and received specific mitigations to reduce potential for accumulation of detrimental soil conditions including reducing potential soil loss stemming from loss of surface vegetation through modified harvest practices (Soils report page 12 and Soils Report Appendix C). Monitoring actions during and post treatment will identify any areas requiring specific mitigations or restorative actions.*

BMBP21 - Logging proposed in the East Face project, such as overstory logging and targeting late seral species for removal, will move stands away from late seral structure. This is a violation of the Eastside Screens directive to move stands towards late seral structure.

Response – *The Eastside screens do not direct movement to later seral structure but too late and old structure. Late seral species are not specifically targeted. The intent of the treatments is to reduce density which will maintain or enhance tree health and vigor, reduce fire risk from high fire severity and reduce susceptibility to insects and diseases. In the Blue Mountains some late seral species are also the most susceptible to fire damage and insect and disease mortality and tend to be removed at disproportional numbers to early seral species. The majority of treatments in East Face are in the understory reinitiation (UR) stage and by reducing density will increase health and vigor of residual tress and in the future provide the large structure that is missing in the UR stage.*

BMBP22 - We are concerned about the extent of logging, even non-commercial logging, within riparian reserves (~790 to ~990 acres). We are also concerned about the small no-cut buffers proposed. Buffers required by PACFISH/INFISH should be respected. Failure to use of required buffers for streams or other water bodies is a violation of INFISH or PACFISH riparian buffer requirements or Riparian Management Objectives (RMOs).

Thinning in riparian areas may negatively impact streams by increasing water temperature and sediment loading, negatively affecting nutrient cycling, and altering stream hydrographs. These potential impacts were not adequately considered in the East Face EA, even though these negative impacts are well documented in numerous peer-reviewed scientific studies looking at riparian thinning. In the draft Forest Plan Revision for the Blue Mountains, the USFS discloses that: “[r]esearch has shown that effective vegetated filter strips need to be at least 200 to 300 feet wide to effectively capture sediment mobilizing by overland flow from outside the riparian management area” (USFS proposed Forest Plan Revision vol. 2 pg. 52). It is logical that logging as “restoration” within 200 to 300 feet from streams would cause fine sediment production and allow for sediment delivery into streams, and potentially contribute to stream temperature increases, increased variability in water quality and aquatic habitat parameters, alterations to stream hydrology, and other negative impacts. Furthermore, it has been widely documented that headwater streams and non-fish bearing streams need more, not less, protection, and that existing PACFISH/INFISH buffers do not offer adequate protections for these streams. Negative impacts to upstream reaches, such as higher temperatures, increased sediment loading, down-cutting, and altered hydrographs also negatively affect downstream reaches. In order to protect downstream fish bearing reaches, headwater streams need at least as much protection than larger downstream reaches (Rhodes et al., 1994; Moyle et al., 1996; Erman et al., 1996; Espinosa et al., 1997). Both Erman et al., (1996) and Rhodes et al., (1994) concluded, based on review of available information, that intermittent and non-fish-bearing streams should receive stream buffers significantly larger than those afforded by PACFISH/ INFISH. In addition, Best Management Practices may need to be specially designed to ensure protection of Bull trout (USFWS 2010).

A 50-foot no activity buffer for fishbearing streams is wholly inadequate and will not protect water quality or stream habitats. We have the same concerns regarding the inadequate 30-foot buffer for removing shade-producing vegetation. The EA also states that:

“Intermittent non-fishbearing streams within the project area are typically dry by mid-June and do not contribute to summer stream temperatures and are therefore not an issue for maximum stream temperatures.”

However, summer stream temperatures are not the only time streams are subject to temperature standards, and certainly not the only time of year they are known to exceed those standards. The dismissal of intermittent streams to contribute to increases in stream temperatures is scientifically unfounded, and runs contrary to empirical evidence and to policy.

Response – Refer also to the response to BMBP11 and 13. This comment refers to PACFISH/INFISH “standard widths” defining interim RHCAs. Inland Native Fish Strategy (INFISH) Environmental Assessment DN and FONSI (1995) states that “Site specific (RHCA) widths would apply where necessary to achieve riparian management goals and objectives, or decreased where interim widths are not needed to attain RMOs or avoid adverse effects.” In addition PACFISH/INFISH Standards and Guidelines (1995) direct “establish a program that will contribute to long-term stream habitat stability,” RHCA’s may be modified where stream reach or site specific data support the change...RHCA widths may be increased where necessary to achieve riparian goals and objectives, or decreased where interim widths are not needed to attain RMOs or avoid adverse effects to listed Salmon.”

In the East Face EA site specific conditions (overstocked, dense lodgepole pine stands),

as well as risk of stand replacing wildfire or insect/disease infestation is discussed in detail (pages 4, 8, 10, 14-16, 21-22, 28, 77-81, 127-139). See Pages 162-163 No Action Alternative for risks of fires in riparian areas and lack of tree growth in overstocked stands and risk associated with insects and disease causing mortality of riparian trees.

Appropriate stocking levels can help to increase tree growth and increase resistance of stands to fire, insect, and disease (Lambert, 1994) (EA page 163). Increasing tree growth would improve the size of trees in the RHCA's so that larger diameter trees are available for LWD recruitment into the stream. This would help meet riparian management objectives (RMOs) for Large Woody Debris, and improve habitat features such as wood-forced scour pool development and pool quality and cover for fish, in addition to adding roughness that improves complexity of stream channels, and route and store sediment including spawning gravels.

For riparian treatments and stream temperature refer to response to comment BMBP13 (page 168-170 EA), for sediment loading and erosion rates see mitigation measures described on page 167-168 (hand thinning only), see discussion on BMP monitoring on the La Grande Ranger District on two projects, Starkey and Horsefly with similar RHCA no activity buffers (EA 167).

Refer also to the response to BMBP11.

In response to the draft Forest Plan revision for the Blue Mountains, see the discussion on page 287 in the Draft Environmental Impact Statement Volume 1 Chapter 3:

“Some reviews of the effectiveness of riparian buffers have concluded that widths of 300 feet or one site-potential tree, are required in order to protect all of the desired functions of riparian areas (Wenger 1999). A review by Castelle and Johnson (2000) suggests that riparian buffer widths of 5 to 15 meters (16 to 49 feet) are sufficient to provide 50 to 75 percent of desired riparian function, which include sediment filtration, stream temperature moderation, inputs of large organic debris, production of fine particulate organic matter, and stream bank stability. Castelle and Johnson (2000) found that most of the influence on stream bank stability was provided by fine roots within the bank itself. A study by Lakel et al. (2010) conducted in the Virginia Piedmont indicated that undisturbed riparian strips 50 feet wide were capable of trapping 97 percent of eroded sediment as long as flow was not channelized. Tang and Montgomery (1995) suggest that riparian buffers 100 meters wide would include 75 to 90 percent of potentially unstable ground in watersheds within the Olympic Peninsula in Washington. Lastly, a review by Pollock and Kennard (1998) concluded that buffer widths of 50 to 250 feet should be sufficient to provide most, if not all, of the desired functions of riparian areas in watersheds in eastern Washington.”

In addition see paragraph b of TM-1 (Timber Management) in PACFISH and INFISH Standards and Guidelines (1995): “Apply silvicultural practices for RHCA's to acquire desired vegetation characteristics where needed to attain RMOs. Apply silvicultural practices in a manner that does not retard attainment of RMOs and that

avoids adverse effects on aquatic resources.

This comment incorrectly uses the word “reserves.” PACFISH/INFISH did not intend for RHCA buffers be off limits to stand management activities such as thinning, only that individual projects provide the rationale for working within them. PACFISH page C-6 describes RHCA’s as “portions of watersheds where riparian-dependent resources receive primary emphasis, and management activities are subject to specific standards and guidelines.” This comment refers to PACFISH/INFISH “standard widths” defining interim RHCAs. Inland Native Fish Strategy (INFISH) Environmental Assessment DN and FONSI (1995) states that “Site specific (RHCA) widths would apply where necessary to achieve riparian management goals and objectives, or decreased where interim widths are not needed to attain RMOs or avoid adverse effects.” In addition PACFISH/INFISH Standards and Guidelines (1995) direct “establish a program that will contribute to long-term stream habitat stability,” RHCA’s may be modified where stream reach or site specific data support the change...RHCA widths may be increased where necessary to achieve riparian goals and objectives, or decreased where interim widths are not needed to attain RMOs or avoid adverse effects to listed Salmon.” The buffer width required to protect shade, provide microclimate, and prevent sediment delivery are analyzed in the EA (167-170). Buffer width for this project were designed site specifically to accomplish goals and objectives for riparian stand health, improve riparian condition and associated RMOs, and maintain shade, microclimate and prevent sediment delivery. In the East Face EA site specific conditions (overstocked, dense lodgepole pine stands), as well as risk of stand replacing wildfire or insect/disease infestation is discussed in detail (pages 4, 8, 10, 14-16, 21-22, 28, 77-81, 127-139). See Pages 162-163 No Action Alternative for risks of fires in riparian areas and lack of tree growth in overstocked stands and risk associated with insects and disease causing mortality of riparian trees. Appropriate stocking levels can help to increase tree growth and increase resistance of stands to fire, insect, and disease (Lambert, 1994) (EA page 163). Increasing tree growth would improve the size of trees in the RHCAs so that larger diameter trees are available for LWD recruitment into the stream. This would help meet riparian management objectives (RMOs) for Large Woody Debris, and improve habitat features such as wood-forced scour pool development and pool quality and cover for fish, in addition to adding roughness that improves complexity of stream channels, and route and store sediment including spawning gravels.

For riparian treatments and stream temperature refer to response to comment BMBP13 (page 168-170 EA), for sediment loading and erosion rates see mitigation measures described on page 167-168 (hand thinning only), see discussion on BMP monitoring on the La Grande Ranger District on two projects, Starkey and Horsefly with similar RHCA no activity buffers (EA 167).

BMBP23 - The EA inappropriately relies on BMPs and PDFs for determining that this project will uphold standards and legal obligations under the Clean Water Act, the ESA, NFMA, or the Forest

Plan. This includes ODEQ stream temperature and sediment standards, protection for terrestrial and aquatic species and their habitat, soil conditions, and other standards. The EA relies on BMPs and PDFs in their determinations of no significant impacts from the project and in stating that there will be “no trend toward uplisting or loss of species viability” for numerous species. “Best Management Practices” (BMPs) or “Project Design Features” (PDFs) are not adequately monitored in past projects for effectiveness, and may not be adequately effective.

Response – *Refer also to the response to BMBP11 and 13.*

The proposed project is in accordance with all national, regional, state and local regulations and policies including Clean Water Act, Endangered Species Act, National Forest Management Act and the Wallowa-Whitman Land and Resource Management Plan. See response to BMBP 30 and BMBP 31 regarding following ODEQ standards for water quality based on identified beneficial uses.

This EA incorporated Best Management Practices (BMPs) into the project planning for water quality management. During the planning (NEPA) process potential impacts to water quality and other resources like soils and riparian areas that may affect water quality were identified. Requirements from other laws and regulations, the Wallowa-Whitman land and resource management plan and state BMPs were incorporated into project design. The proposed action and alternatives were developed to align with appropriate site specific BMP prescriptions to avoid, minimize and mitigate impacts to meet water quality objectives.

Following National Best Management Practices for Water Quality Management on National Forest System Lands, AqEco-1 Aquatic Ecosystem Improvement and Restoration Planning was used in identifying stands that would benefit from riparian treatment and thinning dense, overstocked lodgepole pine stands and avoiding impacts to riparian areas by hand thinning treatments only within RHCA buffers. Desired future conditions were used to set project goals and objectives. In addition, National BMP AqEco-2. Operations in Aquatic Ecosystems will be used for replacing the culvert on Wolf Creek and replacement and removal of other structures during road reconstruction, closure, and decommissioning to “avoid, minimize, or mitigate adverse impacts to water quality when working in aquatic ecosystems.” In water work would occur during the instream work window in accordance with Oregon Guidelines for Timing of In-Water Work to Protect Fish and Wildlife Resources for Wolf Creek (EA page 162) and other applicable road related in water work. Measures to avoid or minimize impacts to waterbodies during culvert removal or replacement work in AqEco-2 include minimizing heavy equipment entry into or crossing water as applicable, conducting operations during dry periods, installing and maintaining erosion control measures, use suitable measures to divert or partition channelized flow around the site or to dewater the site as needed to the extent practicable. Inspection of contracted work would occur as well as BMP monitoring. The National BMP program has an associated data management system that facilitates documentation and reporting of BMP monitoring results the forest and regional level. The Wallowa-Whitman National Forest has been using the data management system to document and report results of implementing BMPs at the project level and has used BMPs during the planning of the East Face EA.

BMBP24 - Black-backed woodpecker (ESA candidate for uplisting and MIS) and American marten (MIS) will be negatively affected by this project. The EA failed to include the Black-backed woodpecker as a candidate for uplisting. Black-backed woodpeckers need a high density of snags and periodic flushes of pine bark beetle and stand replacement fire, both of which would, theoretically, be reduced by the East Face project.

Black-backed woodpeckers:

The EA notes (pg. 194) that habitat is lacking in the project area, and admits that the no action alternative would benefit Black-backed woodpeckers. The EA also admits that the proposed logging would reduce the future habitat suitable for Lewis', hairy, and Black-backed woodpeckers within a large portion of the project area (pg. 199). Unfortunately, the EA failed to offer substantive analysis for these species. In addition, naturally dense, mixed-conifer forests are necessary for these species and should not be logged or moved outside of their historic regimes. These regimes are longer than fire suppression efforts have occurred, and are therefore within their HRV and should not be thinned or burned.

Hutto (2008) noted that Black-backed woodpeckers strongly select high-intensity fire areas, and post-fire occupancy is greatly reduced by pre-fire mechanical thinning. The East Face project is planning to reduce the availability of habitat for the Black-backed woodpecker through fire suppression as well as through reducing forest density, potentially contributing to further population declines for this species.

Hanson (2015) discusses Black-backed woodpeckers in his fire science synthesis, and summarizes Rota (2013) in their Ph.D. dissertation *Not all forests are disturbed equally: population dynamics and resource selection of Black-backed Woodpeckers in the Black Hills, South Dakota*. This study highlights the importance of naturally occurring, beetle-killed stands that are not thinned to maintain population numbers for this declining species. The East Face project will negatively impact Black-backed populations, as the project proposes to remove suitable habitat for this species. The project will also shift the natural fire regime to unnaturally frequent and low-intensity regimes in mixed conifer forests would also harm Black-backed woodpeckers.

"Black-backed Woodpeckers only maintain stable or increasing populations (i.e., viable populations) in recent wildland fire areas occurring within dense mature/older forest (which have very high densities of large wood-boring beetle larvae due to the very high densities of medium/large fire-killed trees). And, while Black-backeds are occasionally found in unburned forest or prescribed burn areas, unburned "beetle-kill" forests (unburned forest areas with high levels of tree mortality from small pine beetles) and lower-intensity prescribed burns have declining populations of Black-backed Woodpeckers (with the exception of a tiny percentage of beetle-kill areas). The study shows that unburned beetle-kill forests do not support viable populations, but very high snag-density beetle-kill areas tend to slow the population decline of Black-backed Woodpeckers in between occurrences of wildland fire. Population decline rates are alarmingly fast in low-intensity prescribed burn areas, indicating that such areas do not provide suitable habitat. Black-backed Woodpeckers are highly specialized and adapted to prey upon wood-boring beetle larvae found predominantly in recent higher-intensity wildland fire areas. Moreover, while Black-backed Woodpeckers are naturally camouflaged against the charred bark of fire-killed trees, they are more conspicuous in 8 unburned forests, or low-intensity burned forests, and are much more vulnerable to predation by raptors in such areas. For this reason, even when a Black-backed Woodpecker pair does successfully reproduce in unburned forest or low-intensity fire areas, both juveniles and adults have much lower survival rates than in higher-intensity wildland fire areas."

He also highlights other relevant studies showing that thinning is likely to harm Black-backed woodpeckers in part due to lack of future snag recruitment:

Saab, V.A., R.E. Russell, and J.G. Dudley. 2009. Nest-site selection by cavity-nesting

birds in relation to postfire salvage logging. Forest Ecology and Management 257:151–159. (Black-backed Woodpeckers select areas with about 325 medium and large snags per hectare [about 132 per acre], and nest-site occupancy potential dropped to near zero when snag density was below about 270 per hectare, or about 109 per acre [see Fig. 2A, showing 270 snags per hectare as the lower boundary of the 95% confidence interval].) While this study focuses on salvage logging, it is also important to note that if forest density is reduced across the landscape, then future snag densities will also be reduced.)

Many of the above concerns and issues apply to other woodpeckers, such as the Three-toed woodpecker, and PCEs.

Response – *As acknowledged in the EA, the intent of this project is to reduce the risk of uncharacteristic wildfire that would threaten limited resources (old growth, private property) and the lives of firefighters. We recognize that fire is a natural part of the forces that shape a landscape and the intent of this project has never been to eliminate fire from the landscape, especially in ecologically appropriate areas. Accordingly project implementation may result in a future decrease of stand replacing fires within the project area. This project area is less than 1% of the total Wallowa-Whitman and after project implementation there will still be many acres that have the potential of a stand replacing fire as evidenced by fire behavior during the summer of 2015. Please refer to the EA page 191 for further analysis on PCEs and snag densities.*

BMBP25 - We also have similar concerns that the East Face project will negatively affect population trends and habitats for wolverine (MIS and Region 6 Sensitive species), Cooper's Hawk (MIS), Sharp-shinned hawk (MIS), Three-toed woodpecker (MIS), Mule deer (MIS), and Rocky mountain elk (MIS).

Response – *Cooper's hawk, Sharp-shinned hawk and mule deer are not MIS species on the Wallowa-Whitman National Forest. For more analysis on wolverine, please refer to the Biological Evaluation within the project record. For more analysis on three-toed woodpecker and Rocky Mountain Elk please refer to the Wildlife Specialist report within the project record (Pages 2, 39).*

BMBP26 - The project also does not benefit American marten (MIS), which needs an abundance of down wood and large (overstory) snags. The East Face project will reduce the amount of forest density and therefore reduce available for American marten, as well as decrease large tree structure, current snag densities, and future large snag recruitment—all of which are needed by this species. Fuels reduction activities and the logging of large trees will harm American marten and their habitat, as they depend on dense forests, particularly in riparian areas.

Response – *Effects to American marten are described in detail in the EA on pages 106-111.*

BMBP27 - Northern goshawk are a Management Indicator Species for the Wallowa-Whitman. Logging activities, including overstory logging and density and fuels reductions, will negatively impact goshawk and their habitat.

Response – *Effects to goshawk are described in detail in the EA on pages 111-*

BMBP28 - The Olive-sided flycatcher may also be negatively affected by the East Face project. If implemented, the East Face project will not adequately protect this species, and may contribute to population declines. The USFS failed to include adequate analysis or disclose best available current science in relation to examining effects on the Olive-sided flycatcher. Robertson and Hutto (2007) provide evidence for this concern in their study *Is selectively harvested forest an ecological trap for Olive-sided flycatcher?* The authors state that:

*“Human activities that closely mimic the appearance but not the fundamental quality of natural habitats could attract animals to settle whether or not these habitats are suitable for their survival or reproduction. We examined habitat selection behavior and nest success of Olive-sided Flycatchers (*Contopus cooperi*) in a naturally occurring burned forest and an anthropogenically created habitat type—selectively harvested forest. Olive-sided Flycatcher density and nestling provisioning rates were greater in the selectively harvested landscape, whereas estimated nest success in selectively harvested forest was roughly half that found in naturally burned forest. Reduced nest success was probably a result of the relatively high abundance of nest predators found in the artificially disturbed forest. These results are consistent with the hypothesis that selectively harvested forest can act as an “ecological trap” by attracting Olive-sided Flycatchers to a relatively poor-quality habitat type. This highlights the importance of considering animal behavior in biodiversity conservation.”*

Response – *We thank you for bringing this literature to our attention. Our analysis on the olive-sided flycatcher has been amended within the wildlife specialist report and the neotropical migrant section of the EA.*

BMBP29 - The East Face project proposes to reduce cover for Mule deer and Rocky Mountain Elk, despite the fact that habitat effectiveness value for cover is well below optimal (see EA page 149 Table 67). Habitat effectiveness value for road density is also well below optimal, even though open road density was inappropriately used for the analysis (closed and temporary roads should be included). We are also concerned about potential calving areas, and degradation to any summer and winter range areas or wildlife corridors.

Response – *The HE value for cover refers to the amount of satisfactory cover relative to marginal cover, not the total amount of cover available. Overall available cover is well above the optimal ratio of cover:forage. Refer to the EA Table 68 page 151 for a summary of cover conversions by action alternatives. The variable for road density is defined as “any traffic at all” (Thomas et al 1988). Closed roads do not meet this definition and any temporary roads currently in use were included in the analysis. Please refer to the EA for effects to summer and winter range areas (page 150) and wildlife corridors (page 98).*

BMBP30 - The proposed actions in the East Face EA will negatively affect stream temperature and sediment loading, and fails to protect water quality standards. The EA does not disclose existing condition of streams, and does not include or summarize temperature regimes or range of temperatures in creeks, even those they acknowledge currently exceed temperature standards. The EA dismisses and downplays possible impacts regarding possible increase in temperature and sediments, even though the USFS does not have compelling or quantitative analysis upon which to base these conclusions. 303(d) listed streams are not allowed to be further degraded

from the water quality criterion or criteria from which they are listed. The EA also does not disclose whether or not a TMDL exists that includes the streams that are not meeting water quality standards. Without plans to address violations through a TMDL, inclusion of TMDL restrictions to address existing violations, and without including existing conditions, the EA cannot adequately protect stream health or comply with existing regulations. Furthermore, the East Face EA inappropriately relies on mitigation measures to determine that impacts will not be significant. These mitigation measures do not have adequate enforcement mechanisms or regulatory strength, and are often subjective, voluntary, and/or only advisory.

Response – *You are correct; the existing condition description was inadvertently left out of the preliminary EA. A detailed description of the stream conditions including stream habitat survey information, water quality, temperature, and 303(d) listed streams within the East Face project area is located in the Fisheries and Watershed Existing Condition report in the East Face analysis file. Information from the Existing Condition report is excerpted below. For impacts regarding possible increase in temperature and sediment see response to comment BMBP-11, BMBP-13 and BMBP-22.*

However, some riparian areas that consist of young, dense conifer canopies would be thinned: RHCA treatments are proposed within 35–51 units for a total of approximately 792–991 acres (EA pages 31, 34, 39, and 43). These treatments would be accomplished by hand only and would be non-commercial in nature to treat the smaller diameter materials retaining all the larger trees for stream shade and large woody debris recruitment

Results of habitat surveys for fishbearing streams in the East Face project area

Stream/Year Surveyed	Survey Length (miles)	Pools (#/mile)	Wetted Width (ft)	Stable Banks (%)	W/D Ratio	LWD (pcs/mi)
Antone Creek/2014	4.4	29	8.5	96.4	12.2	65
Anthony Creek/2014	6.9	25	14.6	100	23.6	5
Indian Creek/2014	2.4	47	5.0	100	5.7	49
North Fork Anthony Cr./2014	3.4	59	8.7	99.5	19.3	18
Dutch Creek/2014	1.5	123	4.8	98.2	17.7	17
Wolf Creek/2013	5.8	34	9.3	96	19.8	53
North Fork Wolf Cr./2013	0.8	51	6.9	100	13.5	74
East Fork Clear Creek/ 2014	3.7	95	6.5	95	23.3	47
West Fork Clear Creek/ 2013	1.8	106	4.2	97	13.0	29
Upper Beaver Cr./ 1992	4.3	20	6.1	ND	11.8	13

ND=No Data

While seven out of the 10 streams surveyed were below the riparian management objective (RMO) for pools/mile at the time of the survey, Dutch Creek and the West Fork of Clear Creek both exceeded the RMO for pools per mile with 123 and 106 pools per mile. The East Fork of Clear Creek came very close to meeting the RMO with 95 pools per mile.

The following streams did not meet the state water quality standard for native Oregon bull trout spawning and rearing use where water bodies must not be warmer than 53.6°F.

- *Anthony Creek Upstream of North Fork Confluence*

- Anthony Creek Upstream of Indian Creek Confluence
- Indian Creek
- North Fork Anthony Creek
- Wolf Creek
- North Fork Wolf Creek

All eight of the streams where temperature data is available have redband trout and these streams were within the temperature requirements for this species. Six of the eight streams that have temperatures data have bull trout and none of these streams met temperature requirements for bull trout, which are a species that require much colder water temperature (temperature must not be warmer than maximum weekly average of 53.6 degrees F).

Nine of the 10 streams fishbearing streams met the RMO for streambank stability of >90%. No streambank stability data is available for one stream surveyed in 1992, Upper Beaver Creek. One of the streams surveyed within the project area, Indian Creek, met the INFISH width to depth ratio of <10. The remaining streams have width to depth ratios within the expected range of Rosgen stream types (Rosgen, 1996).

Anthony Creek, North Fork Anthony Creek, Dutch Creek, and Upper Beaver Creek did not meet the standard of >20 pieces of large wood per mile; however, Antone Creek, Indian Creek, Wolf Creek, North Fork Wolf Creek, East Fork Clear Creek, and West Fork Clear Creek exceeded the standard of > 20 pieces of large wood per mile.

The ODEQ assigns specific standards for water quality parameters based on beneficial uses. Water bodies that do not meet State standards are generally listed as water quality-limited streams under section 303(d) of the Clean Water Act. There are two streams within the East Face project area that are listed under section 303(d). These are Indian Creek and Anthony Creek. Both are listed for temperature. The 303(d) portion of Anthony Creek spans two subwatersheds (Upper and Lower Anthony Creek), and Indian Creek is within the Upper Anthony Creek subwatershed. See Table 7 below.

Table 7. ODEQ 303(d) listed streams in the East Face project area.

Stream	Subwatershed(s)	River Mile	Water Quality Limited For:
Anthony Creek	Upper and Lower Anthony Creek	0 to 16.0	Temperature
Indian Creek	Upper Anthony	0 to 5.2	Temperature

A TMDL Water Quality Management Plan (WQMP) is in the process of being developed for the Powder Basin. Once the TMDL is developed and approved all management activities on federal lands managed by the USDA Forest Service in the Powder Basin will continue to follow standards and guidelines (S&Gs) as listed in the LRMP, as amended by INFISH (USFS 1995), Best Management Practices (BMPs) as defined in various Federal and State laws such as the Implementation Plan for 208 (Water Pollution Control Act, PL 92-500, as amended), USDA Forest Service, National Best Management Practices for Water Quality Management on National Forest System Lands, National Core BMP Technical Guide and Specific Stand Management Unit (SMU) Constraints and Mitigation Measures identified in the Wallowa Whitman NF Watershed Management Handbook.

For more information refer to the Fisheries and Watershed Existing condition report available online at: <http://www.fs.usda.gov/project/?project=41765>

BMBP31 - The East Face EA states that:

“[h]abitat conditions in the North Fork of Wolf Creek are good. The subwatershed does have a high road density, but the majority of roads in the subwatershed are closed. The maximum stream temperature in the North Fork of Wolf Creek exceeds the state temperature standard which is for bull trout.

However, there are no bull trout in the North Fork of Wolf Creek.”

Open road density is inappropriate to use in this determination. Closed roads can and often do pose significant risks to water quality. Also, the USFS is required to follow state temperature standards, particularly if the standard is more protective. Currently, the state temperature standard for the North Fork of Wolf Creek is 12 degrees Celsius. The USFS does not have legal discretion to follow standards that they would rather follow or believe should be in place. State water temperature standard designations are not necessarily tied to Critical Habitat designations, but are based on a number of considerations regarding fish habitat and usage—including cold water needed for downstream beneficial uses. The USFS cannot plan for the protection of the state temperature standard within the East Face project if it has not taken that legal standard into account in the project design. Therefore, this project is in violation of the Clean Water Act by failing to follow the designated state temperature standards and by failing to plan for their protection. No TMDL for the state temperature standard violations has been included in the analysis of the East Face project. The lack of a TMDL in the analysis further compromising the ability of the USFS to take potential impacts to stream beneficial uses into account, or of having a watershed approach to stream health.

Furthermore, it is not clear which additional creeks may be in violation of state water quality standards. Stream temperature records or summaries were not included in the EA or supporting documents, which is a NEPA violation.

Response – *Refer to response to comment BMBP 30 for stream temperature and state water quality standards information and TMDL information.*

True, closed roads are important and are considered, however sediment input from traffic that occurs on open roads is non-existent on roads closed to vehicular access. There still can be problems on closed roads with drainage and hydrologic connectivity, however, closed roads are generally waterbarred and treated to eliminate resource concerns and associated maintenance costs on roads that are not maintained for public access.

The Forest Service does disclose that the state temperature standard for the North Fork of Wolf Creek is 53.6 degrees Fahrenheit (12 degrees Celsius) on page 4 Table 5 Fisheries and Watershed Existing Conditions and Forest Service discloses that North Fork Wolf Creek is not meeting that temperature standard for native Oregon bull trout. The Forest Service also acknowledges that bull trout do not occur in this stream above a barrier falls very close to the confluence with Wolf Creek. There is a full barrier to passage (waterfall/chute) and fish sampling conducted by the Forest Service in 2013 above the barrier falls revealed no bull trout or redband trout. However information is included in the EA that temperature monitoring in this stream does not meet the state water quality standard. Because bull trout are not present in this stream does not mean that the FS is following some other standard.

This project is not in violation of the Clean Water Act, we do not know what is meant by this comment that we are not following designated state temperature standards, or not planning for their protection. This comment is unfounded.

BMBP32 - We are concerned about numerous listed and sensitive species within the project area, including: Columbia spotted frog; Rocky Mountain tailed frog; Bull trout; Canada lynx; wolverine; Gray wolves; Pacific fisher; American marten; Mule deer; Rocky mountain elk; Fringed myotis; Black-backed woodpeckers; Lewis' woodpecker, other listed or sensitive PCE's; other listed or sensitive raptors present within the project area (especially those that rely, at least in part, on forest density); Johnson's hairstreak butterfly; Fir pinwheel; Intermountain sulfur; Western bumblebee; and sensitive and listed botanical species.

We are particularly concerned about how the East Face project will effect Endangered or Threatened aquatic and riparian species and their habitats, including Bull trout and Bull trout critical habitat. Despite the EA's determination that the East Face project is "likely to adversely affect" Bull trout and Bull trout critical habitat, there is no quantification of effects or logical rationale given as to why the project will not have a significant impact on Bull trout. All proposed road activities (including "temporary" roads and reopening old roads) in RHCAs should be dropped to protect listed or sensitive aquatic and riparian species such as Bull trout.

Hydrologist reports and biological opinions or assessments for fish and wildlife should have been included in the EA. Unfortunately, these reports are not even available online, nor are other specialist reports. Therefore, the public cannot investigate the accuracy of scientific claims made within the EA and cannot therefore comment in an informed matter concerning fish viability, water quality, or other issues related to the information in any of the specialists' reports.

Response – *Biological Evaluations for Plants, Wildlife, and Fish species have been completed and a Biological Assessment for Threatened and Endangered Fish species has been completed. The EA describes the end results of these evaluations/assessments. As stated in the FONSI in the EA on pages 291-293, the Regulatory Agencies will have concurred with these findings before the decision is signed. All biological evaluations/assessments have been posted on the project website at: <http://www.fs.usda.gov/project/?project=41765>*

BMBP33 - Road-related activities have consistently been implicated in the worst impacts to water quality and riparian and aquatic habitats in relation to timber sales. All proposals to build roads (including "temporary" roads) and re-open roads should be dropped, particularly in RHCAs.

The USFS wants to have it both ways in analyses regarding roads impacts. First, it claims that re-opening roads and building temporary roads will have minimal impacts due to using already existing wheel tracks and disturbed ground, and road beds left-over from previous logging. However, when calculating road density, soil conditions, etc.—these pre-existing road footprints seem to not exist and are not included. In addition, the USFS consistently asserts that road-related impacts from individual projects will be minimal or almost entirely gone within short time-frames after project completion. These assertions not only defy studies done on impacts related to roads, they also fly in the face of the near-permanent existence of the road beds and disturbed ground that the USFS is constantly proposing to reuse.

Despite this, the East Face project ignores the primary drivers of watershed and aquatic degradation, and proposes to exacerbate these issues in several ways, including creating more

ground and soil disturbance via road-related activities.

Response – *The effects of road related activities are disclosed in the EA under each resource area. The intent behind describing which temporary roads proposed for use under the alternatives would be on existing wheel tracks and which would need to be constructed is to allow for an appropriate analysis of potential disturbance related to each of the temporary roads. The existing wheel tracks were incorporated into the detrimental soil conditions analysis for soils effects along with existing road beds (EA, pages 209-224).*

Project design for ameliorating the impacts of the temporary roads proposed for the project will inhibit the use of the temporary road following harvest. As required by this analysis and the subsequent timber sale contract, all temporary roads will be obliterated at the completion of harvest activities including restoring infiltration and facilitating revegetation. Obliteration may include re-contouring, scattering slash, subsoiling, and seeding as ground conditions dictate (page 31, 39, and 44 of the EA) to stabilize and mitigate the impacts created by the temporary road.

Monitoring of the obliteration of temporary roads on the La Grande Ranger District has occurred in the past and as indicated in the picture below, the removal of these roads from the landscape has been very successful and use has not continued by the public, nor resulted in compaction, disturbance, or sedimentation. Example of rehabilitated temporary road on the LGRD below:



BMBP35 - Effects of logging in this project on aquatic and terrestrial species and habitats were not adequately considered in relation to climate change. Effects of logging and increased forest management on carbon releases were not adequately considered.

Response – *Climate change is addressed in the EA on pages 4, 6, 19, 97-98, 130-131, 133, 136, 137, 191, 227, 240, 258-259.*

Blue Mountain Singletrack Trails Club (BMSTC) Comments

BMSTC1 - The East Face Vegetation Management Project has ***significant long term implications for tourism in Northeast Oregon***. The area is a critical link for non-motorized recreation from Pilcher Creek and Wolf Creek Reservoirs to Anthony Lakes Mountain Resort (ALMR) and the Elkhorn Mountains. BMSTC has attempted to work with the WWNF on management of the existing, and an expanded singletrack, non-motorized trail system in this area since 2009. Our most recent proposal to the WWNF (copy attached) resulted in the following response from the WWNF:

“we are going to undertake the East Face Vegetation Management Project in 2012, and as a part of the process we will address existing and new non-motorized trails.”

However, to our great disappointment there is no alternative in the East Face Vegetation Management Project (EFVMP) that considers options for such trails, and in fact, existing and new non-motorized trails and not addressed? ALMR has significant potential as summer destination area for mountain bicycling and hiking. A singletrack trail system from Pilcher Creek to ALMR (as proposed by BMSTC in 2009) would extend the season of use as well as the overall opportunity for non-motorized recreation.

BMSTC's comments on the EFVMP are as follows:

- 1) We support the vegetation management aspects of the plan.
- 2) We do not support the opening of any of the existing roads that are currently closed to motorized use and believe that additional roads in the area should be closed due to water quality impacts and impacts on *established and proposed non-motorized recreation*.
- 3) We do not support the lack of proposed management alternatives for the existing and proposed non-motorized trails in the area.
- 4) We request that existing and proposed non-motorized singletrack trails be addressed at this time. The EFVMP must be modeled after the project on the Deschutes National Forest in the Whoops and Skyliner Trails areas.

Response - *The existence of a user built/designed single track non-motorized trail system in the East Face project area was recognized during planning for the East Face project. While this is not a designated trail system managed by the USFS, the East Face project Recreation Specialist acknowledged that it is popular amongst its users and needed to be considered during planning for fuels reduction activities. Because designating and designing a single track non-motorized trail system is outside the scope of the East Face project and does not fit the funding or purpose and need as an action connected to fuel reduction activities, project design criteria ensured that future options and opportunities for designation of these trails would be maintained. The following mitigation measure is part of project design in the EA on pages 57-58:*

Post-sale management of the following roads will be coordinated with the District Recreation Manager in order to maintain mountain biking options and opportunities within the area:

Roads: 7315, 7315030, 7315035, 7315040, 7315045, 7315047, 7315048, 7315090, 7312, 7312031, 7312032, 7312033, 7312034, and 7312035

A system of non-motorized trails would benefit more from a site-specific analysis focused strictly on the design and designation of the entire trail system which would meet the short term and longer term needs of all user groups.

Alternative 3 (EA pages 32-36) was designed to not utilize any roads which have been identified as overgrown. Road access is essential to be able to accomplish the vegetation management aspects of the project you indicate your support for above. Maintenance level 1 (ML1) roads are currently closed roads that have been put into storage for future resource management needs such as those proposed in the East Face project. All roads currently managed as ML1 would be reclosed once commercial fuel reduction activities have been completed returning them to their ML1 status until they are needed again in the future or they are designated to other uses.

Boise Cascade (BC) Comments

BC1 - I am in general agreement with the purpose and need for action described in this document. I appreciate the time and effort that the Forest Service has put into working with the Wallowa- Whitman Collaborative and listening to the different perspectives. I am hopeful that this collaborative will be able to come to a consensus agreement regarding the project. These groups can be very effective in providing a multitude of perspectives and solutions on a project level.

Response - *Thank you for your support of and participation in the East Face project.*

BC2 - I do not support alternative 3 or alternative 4 because these alternatives artificially constrain the project through administrative restrictions and do not fully meet the purpose and need of the project.

Alternative 3 does not effectively treat the WUI around the valuable Anthony Lakes Wildland Urban Interface and also restricts needed fuels treatments in the area. Implementation of this alternative will require the Forest Service to return to the project area on a more frequent basis. It also does not adequately create a landscape where the Forest Service can safely contain fires at a smaller scale.

Alternative 4 does not create defensible spaces for firefighters to adequately contain wildfires in the area. Without the ability to do commercial harvest outside of the WUIs, the Forest Service will not be able to adequately protect the water supply that many of our agricultural partners depend on nor will they be able to protect the other habitat and values at risk outside of the WUI. This alternative will not meet the objectives of the priority areas and will require the Forest Service to return frequently to the project area to do additional work to reduce the fire danger and maintain habitat. This alternative will ultimately cost more in the long run due to the risks of fire, disease and insects. It also does not meet the purpose and need for economic returns.

Response - *Alternatives 3 and 4 do meet the purpose and need for this project, but as you point out in your comment, analysis in the EA shows that it would be at a lower level for some of the purpose and need elements than some of the other alternatives.*

BC3 - I'm supportive of alternative 5 because I believe that it best meets the purpose and needs of the project area. I also appreciate that the Forest Service was creative in adding biomass removal opportunities. I suggest that these opportunities be packaged separate from

any stewardship or timber sale contracts because biomass is a different market and traditional purchasers are not situated to deal with this type of material.

Response - *As described in the EA on page 37, Alternative 5 considers biomass removal within non-commercial fuels reduction treatment units (PCT, WFH) recognizing the developing markets for this type of material. The material resulting from these types of treatments would typically be left on-site or burned. Your suggestion to package this type of work and product separate is well taken. As contracts are developed this will be considered as restoration work and packaged into contracts as appropriate for successful implementation.*

BC4 - I'm concerned about the definition of the priority areas, it appears that each of these areas has a different objective that is equally important to the ecological, social, and economic needs of the forest and local communities. I suggest that Forest better explain these objectives in the final EA to clarify that each of these areas is equally important to the fully meeting the purpose and need of the project.

Please explain the desired future conditions of the stands that have been allocated priority 3 status. I was unable to find exactly what the ultimate goal was for these stands.

Response - *As described in the EA on pages 20-21, the priority treatment areas are "based on their proximity to private property, values at risk from wildfire, and/or logical locations for suppression operations." These areas are strictly focused on meeting the fire behavior portion of the purpose and need. The intent behind the development of these areas was to provide the Fire/Fuels Specialist a unit of measure to illustrate relative differences (Table 29 in the EA, page 77) for how each alternative meets the goals of the Cohesive Wildfire Strategy (CWS). CWS goals are (EA, page 71):*

- *Restore and maintain landscapes so that all jurisdictions are resilient to fire related disturbances in accordance with management objectives.*
- *Create fire-adapted communities so people and infrastructure can withstand a wildfire without loss of life or property.*
- *Improve wildfire response so all jurisdictions participate in making and implementing safe, effective, efficient risk based wildfire management decisions.*

Priority area 3 stands are stands where a silvicultural need to treat the stand was identified during field reconnaissance; however, it was not located within a WUI, along the private land interface, or along strategic ridgetops and roads. The goals for these stands are to improve their health and vigor and promote forest structural and compositional conditions reflective of the historic ranges of variation (EA, page 20).

BC5 – I am fully supportive of the use of the Forest Plan amendments for this project area. It is important that we work towards building appropriate habitat types for the forest species. The Wallowa-Whitman Forest is deficit in the old forest single story throughout the forest and specifically within the East Face project. The forest plan amendment to maintain the OFSS is appropriate and does not constitute a loss of old forest and should be carried forward into the final decision because it is the right thing to do on the landscape.

Please explain in further detail the type of work that will happen in the proposed acreage, will all encroaching trees be removed or will there be additional sideboards to ensure the

maintenance and viability of the stand? Boise Cascade fully supports fuels work in the LOS stands in order to ensure that they are more resilient to wildfire, insects and disease.

Response - *In the treatments where stand structure will be moved from OFMS to OFSS density will be reduced to lower management zone (LMZ), ladder fuels will be reduced, and grand fir, subalpine fir, lodgepole pine and Engelmann spruce will be removed if within 15-25' of a healthy ponderosa pine, Douglas-fir or western larch. Depending on post-sale conditions additional biomass could be treated and a fuels treatment conducted to reduce fuel hazards.*

BC6 - In the post-sale road management plan, the Forest Service identifies 38.5 mile of roads that are to be decommissioned. Please explain the decommissioning process, will they be permanently closed or will they be ripped up? If fully decommissioning them from the landscape, please disclose the costs of decommissioning vs. leaving them closed on the landscape. Are they causing damage in the state that they are in? It appears that they are naturally closed and unused; it would be cheaper for the Forest Service to leave them in that state and be able to utilize them for future needs.

Response - *Decommissioning of a road can be done by a variety of methods. The selection of which method to be used will depend upon site-specific survey and considerations with respect to the condition of the road and adjacent resources. Decommissioning eliminates all maintenance needs for the asset. (Federal Accounting Standards Advisory Board, 1998). It results in the stabilization and restoration of unneeded roads to a more natural state (36 CFR 212.1). Decommissioning methods range from abandonment (removal of route markers, documentation in the road atlas, and removal of roads from system maps), to blocking access and subsoiling the road, to full recontouring of the road back to near natural conditions. Native seed is applied as necessary to aid in revegetation of the disturbed areas. In all types of decommissioning, culverts are removed, and stream crossings are reshaped. Often, a combination of methods may be utilized for cost efficiency and effectiveness. With this in mind, decommissioning costs vary widely depending upon the level of effort required to accomplish the final design, ranging from \$200 (lump sum) for a minimal amount of work to \$30,000/mile for extensive recontouring operations.*

BC7 - Water is a major concern for the agricultural community adjacent to the project area, this should be a point of evaluation for risk within the EA. I'm concerned that some of the alternatives do not have enough emphasis on protecting the water supply from additional sediment. It is important that the Forest Service set this landscape up so that fires in the area are not detrimental to the production of water for the agricultural partners in the valley.

Response - *The fire behavior analysis, modeling, and results in the EA on pages 73-91 provide this analysis. Fire behavior modeling shown in Appendix A of the Fire/Fuels Effects Report illustrates the effectiveness of the defensible fuel profile zones (DFPZ) between alternatives and was incorporated into the fire behavior effects discussion. The fire behavior differences between alternatives would be the most effective method of illustrating potential effects of each alternative on the landscape and associated resources (such as water for the agricultural community) in the event of a wildfire.*

BC8 - I am extremely concerned with the economics of this project. It appears that the Forest Service is removing approximately 2,500 board feet per acre in the majority of the commercially treated areas. This is a very low amount and is not economical for the purchaser or operator. With the productivity of these stands, I'm concerned that we are not removing enough to mitigate the fire, insect, disease risks in the project area.

Please look at removing additional material from these stands to allow for economic viability as well as increase the return interval on these forests. Please see the National Forest Health Restoration Assessment to understand the impacts that these projects have on the area. It is important that we continue to work to improve the projects to meet the local community needs to reduce reliance on supplemental assistance from the state and federal government.

Response: *The fire behavior modeling utilized in this analysis indicates that the prescriptions used in this analysis such as "thinning stands from below" to a basal area of 100 (Sq ft) or less with a concurrent surface fuel treatment, has low potential for crown fire. The thinning is designed to leave the stands comprised of a higher percentage of western larch which also reduce crown fire potential. There is no need to go to an even lower basal area to meet fire behavior objectives in this project area. The fire behavior modeling (Fire/Fuels Effects Report Appendix A in the East Face Analysis File) results show how the proposed thinning effects fire behavior in treated stands. These results are summarized in the EA on pages 77-91.*

BC9 - In discussing the social environment, please include a discussion of local county government and how the Forest Service's activities in the forest will affect the revenue sharing of this project. This project will also have an impact on local schools and roads funding as well because the Forest Service is required by law to share 25% of the timber sale revenue with the county. I'm concerned that this was not taken into account during the design of this project and with the amount of non-economical units in the project area; it could detrimentally affect the local communities through reduced revenues.

Response - *Local county governments are not able to tax federal lands within their jurisdictions in the same manner as they would for private lands. Therefore, over time federal land payment programs have been established to compensate the local governments for this reduction on taxable land base when it occurs. These payment programs are funded by federal appropriations or from receipts received by federal agencies from activities on the federal lands such as timber harvest.*

The 25 Percent Fund, established in 1908, provides for revenue sharing obtained through receipts to the Forest Service. On the East Face project, those receipts will be primarily from the sale of timber. These receipts are distributed directly to counties and must be used to fund either roads or schools. Following are the projected 25% receipt calculations by alternative. Calculation of the 25 % Fund is based upon the sold timber stumpage value of all forest products, both sawtimber and nonsaw timber.

Alternative 1 (No Action) – \$0

Alternative 2 - \$5,517

Alternative 3 - \$12,233

Alternative 4 - \$2,237

Alternative 5 - \$6,292

Payments in Lieu of Taxes (PILT), initially authorized in 1976, was enacted to minimize fluctuations in payments to counties from year to year. These payments to the counties are based upon congressional appropriations rather than directly from timber sale receipts. PILT is permanently authorized, however appropriated funding levels have been typically uncertain from year to year. PILT funding may be used for various programs as determined by local county officials.

The Secure Rural Schools and Community Self Determination Act (SRS) was enacted initially in 2000 to assist counties due to the declining harvest levels from federal lands and the related reduction of harvest values. Counties elected to either select SRS or retain the 25 Percent Fund as their form of revenue sharing. Both Baker and Union Counties selected to use SRS revenue sharing. SRS allocates payments to counties for 3 specific purposes specified by Titles I, II and III. SRS is not permanently authorized and is also subject to congressional appropriations.

Federal Payments to Counties was not a direct consideration in developing alternatives, rather jobs and potential economic effects from those jobs were calculated. It is recognized that local counties are unable to receive a stable, reliable source of compensation for non-taxable federal land within their boundaries. The local affected counties within the East Face Project area obtained from 5 to 20% of the total county revenue generated from these federal land payment sources in five selected years from 1987 to 2012. Both timber harvest volumes and values are factors which vary over time.

BC10 - Landscape heterogeneity is incredibly important for both the wildlife and overall vegetation resilience in the mixed moist conifer landscape. A critical feature of wildlife habitat in mixed-conifer landscapes in eastern Washington and Oregon is the multi-scale (landscape and stand) diversity and juxtaposition of patch types of differing composition and structure (Perry et al. 2011). While somewhat counterintuitive, it is important to note that a landscape can be highly fragmented or patchy, as is commonly the case in landscapes with mixed-severity fire regimes, and still be highly connected for a variety of ecological processes (Stine et al).

Response - *We agree that patchy landscapes can still be considered highly connected for a variety of ecological processes. Landscape connectivity is a very complicated concept and effective connectivity tends to be very species-specific. Connectivity for a snail differs greatly than connectivity for a goshawk on both a habitat and a scale basis. Connective corridors as directed by the East Side SCREENS are intended to maintain high canopy cover and ground heterogeneity for old forest dependent species that have been shown to avoid openings. Watershed level connectivity as analyzed by this project is also focused on maintaining habitat for mature forest species that have been shown to be negatively affected by forest fragmentation.*

BC11 - During implementation, I encourage the Forest Service to utilize the new tools from

the Farm Bill that authorizes normal timber sales to be sold using designation by prescription. Using this form for implementation will reduce the implementation costs.

Response: *Current Forest Service and Region Six direction allows for the consideration of the "D X P" (designation by prescription) and it will be considered for the East Face project. Selection of the designation method(s) will also consider other factors besides marking relating to implementation costs including timber volume estimations, contract administration, and prescription complexity.*

Response to C&D.Bruland East Face Comments

CDB1 - Thank you for your work on the East Face Vegetation Management Project (Project). Completion of this project will mean a healthier, safer, and economically brighter future for Baker and Union Counties. This vegetation management project will mean reduced chances of catastrophic wildfires in the Elkhorn Mountains, protection of private property, enhanced public safety, and an economic boost to the counties and ultimately the Forest Service.

We also thank you for your participation in Coordination with the Baker County Commissioners. This is an encouraging and proactive step that will develop into a working relationship that benefits everyone. Full engagement into this process will help to supply the Project with much needed backing should a protest arise, as well as promoting goodwill within the community.

Response - *Thank you for your support of the East Face project.*

CDB2 - The maps that are supplied on-line are unusable. It is also unreasonable to assume that the public should pay to get maps from the local office. The scale is so small on the on-line maps that there is no way to discern landmarks and roads, streams and other landmarks are not identified. There appears to be large blank areas with no forest health treatment planned and no explanation to why this is so. We encourage you to treat as many areas as possible with this Project to reduce wildfires, improve forest health and increase the economic vitality of the project.

Response - *The on-line maps located at: <http://www.fs.usda.gov/project/?project=41765> are in Adobe Acrobat (.pdf) format and can be zoomed in on by hovering your cursor over the map and clicking the plus arrow on the pop-up navigation pane. Streams are all named on the map along with major landmarks and topography lines.*

Refer to response to Baker County Comment BCo1.

CDB3 - The treatments in the Project are designed solely for the growth and vigor of the stands. There is no mention of thinning for fire hazard reduction. Forest stands, especially those that have not been actively managed, need to be thinned wider than the optimal spacing for growth that allows for crown development and reduction in the potential for wildfire 'crowning'. This would not only reduce the threat of catastrophic crown fires, but would also reduce the need for repeated thinning to maintain growth rates and with additional volume harvested per acre would increase the economic benefits.

Response: *Refer to response to Baker County Comment BCo2.*

CDB4 - We urge you to design all of the alternatives to allow removal of biomass and other

marketable products. This includes Post and Pole removal, firewood cutting and any other future use of forest products. The multiple use of forest products benefits small businesses and the citizens, thereby increasing the economic base of the County and providing for human welfare. By addressing and analyzing potential impacts now future NEPA analysis will not be needed.

Response: *Refer to response to Baker County Comment BCo8.*

CDB5 - We question why there are 180-300 trees per acre (tpa) specified for the reforestation. A reasonable goal is 100 tpa at establishment in 5-years and 50 tpa at 50-years. If it is assumed that the average mortality rate is 33%, then 150 tpa planted should yield 100 tpa in 5-years and significantly save on reforestation costs.

Response: *Refer to response to Baker County Comment BCo4.*

CDB6 - As designed, this Project does not remove trees over 21" dbh. This arbitrary number has been shown to not be in the best interest of forest health. Instead, this should be changed to retention of trees over 150-years old. This allows for younger, fast growing trees to be removed and slower growing trees to be retained. Resiliency and sustainability of the forest, as well as fire resistance, has more potential for success if the slower growing pine and larch are retained. In addition, the removal of diseased and unhealthy trees, no matter what their dbh, will promote and overall more healthy forest.

Response: *Refer to response to Baker County Comment BCo5.*

CDB7 - There is no evidence that the timber harvest was designed to improve the economics of the Project. Thinning to lower densities increases the economics. By thinning from below, each additional tree is a larger tree and the increase growing room will take longer to close back thereby increasing the time between harvests. This provides for a more sustainable and economic viable approach for harvest operations and encourages better selection of tree species for future forest product marketability.

Response: *Refer to response to Baker County Comment BCo18.*

CDB8 - There did not appear to be a silvicultural diagnosis completed and therefore no evidence to the amount of total stands in need of treatment to improve forest health and fire resiliency. Any comparison between the Alternatives is difficult without this information.

Response: *Refer to response to Baker County Comment BCo20.*

CDB9 - This Project does not provide for any riparian treatment which will reduce conifer growth and improve streamside shrub health. It is well documented that shrubs of the appropriate height will promote water quality as well as trees. Too, riparian thinning has the potential to increase summer stream flows by a reduction in water being used by streamside conifers. If left untreated, riparian areas become corridors for wildfire.

Response - *Some riparian areas that consist of young, dense conifer canopies will be thinned: RHCA treatments are proposed within 35–51 (depending on which alternative you are looking at) units for a total of approximately 792–991 acres (EA pages 31, 34, 39, and 43). These treatments would be accomplished by hand only and would be non-commercial in nature to treat the smaller diameter materials retaining all the larger trees for stream*

shade and large woody debris recruitment

CDB10 - The Road Management Plan calls for reclosing most of the roads that were previously closed. The road densities as calculated in the EA do not follow Forest Plan methods which specify road density is to be computed on a sub-watershed basis. The EA show them to be calculated only on the portions within the Project area. There is no need to reclose roads when road density is already below the forest plan standard. Leave roads open for future management of the vegetation through thinning, prescribed burning and to facilitate rapid response to fire or other emergencies. Any road closure needs to go through the Coordination process with the County and be dealt with on a road-by-road basis.

Response: *Refer to response to Baker County Comments BCo11 and 12.*

CDB11 - There was no mention of keeping road access open for mining claims. Regulations state that all mining claims shall have the appropriate road access regardless if they have a current, approved, operating plan. Promotion of multiple uses, including mining, within the Project is crucial to the economic benefit of the County and its citizens.

Response: *Refer to response to Baker County Comment BCo13.*

CDB12 - As designed in this Project, wildlife corridors are wider than needed. If connectivity corridors are kept in this project, retaining cover canopy In the upper 1/3 of the site will not meet the fire or forest health objectives. The current elk cover and forage ratio is 71:29%. The optimal ratio is 40:60%. This indicates a need to thin and regenerate harvest more stands to improve forage production. As designed, this project does increase the amount of forage, but could improve elk habitat even more if stands were converted to forage by opening up the canopies. This approach is critical to retain elk on public lands and keep them off farm and ranch lands.

Response: *Refer to response to Baker County Comment BCo10.*

CDB13 - In the Mitigation Measures section, it specifies that green tree replacement, trees that are left to provide for a continuous supply of future snags for cavity nesting wildlife, are to be left at 25-45 tpa. This is excessive and should be in the range of only 12-15 tpa. Raptor nest protection is not specified as to timing or distance. In the past they have been proved to be overly restrictive. This needs to be addressed prior to finalization of the EA.

Response: *Refer to response to Baker County Comment BCo14.*

C.Rehg (CR) Comments

CR1 – The proposed Elkhorns timber sale is far too large. As well, no clearcutting can be allowed. Also, no cutting can be allowed within 150 feet of streams. I know that 150 feet is not required, but it should be at least this amount, for any streams.

Response – *There are no clearcuts proposed within the East Face Vegetation Management project. No timber harvest will occur within riparian habitat conservation areas; however, some non-commercial thinning of small diameter trees is proposed up to 30-50 feet from selected streams. The remainder of the streams within or adjacent to treatment units would receive stream buffers of 100 to 300 feet (EA page 48).*

Dennis Morgan (DM) Comments

DM1 - Thank You for all the work you are doing to make the forest more fire resilient. I would like to encourage you to look at making biochar from as much of the forest slash created by this project as possible. You could use it for soil improvement and native plantings, and or sell it to farmers and gardeners to offset some of the costs.

Response - *If a biochar company were to express interest in utilizing the residual wood product materials generated in this project it will be available for their needs and the Forest would be happy to contract with them to meet their needs.*

Eastern Oregon Mining Association (EOMA) Comments

EOMA1 - The Forest Service is to be commended for taking this vital first step in managing the timber along the East face of the Elkhorn Mountains. Implementation of this project will mean reduced chances of catastrophic wildfires in the Elkhorns; BLM, private land owners and National Forest system lands will benefit. However, although Alternative 2 is the preferred alternative for the Forest Service, it seems that the additional biomass from Alternative 5 would be a benefit to the land and to the economy. Temporary roads might be open a bit longer, but in the long run this additional treatment is preferable.

Response – *Thank you for your support of the East Face project. Once a purpose and need is identified for a project area, a proposed action is developed to meet that purpose and need and used during the scoping process to identify issues and concerns with the proposed action around which additional alternatives are then developed to respond to those issues. Alternative 2 is the Proposed Action which was used during the public scoping period to identify issues and concerns for the East Face project (EA pages 9-18). These responding to these issues resulted in the development of three additional alternatives (Alternatives 3, 4, and 5). There is no preferred alternative at this point in the process based on the outcome of this comment period the decision maker will choose a preferred alternative based on the analysis of the effects of implementing each of the alternatives in the EA and the information/comments received during public involvement efforts and this public comment period.*

EOMA2 - Riparian areas, which can carry a fire, acting just like a chimney, should also be treated. No corridors are needed. These areas can also carry a fire. In addition, the Forest Service should consider treating the Anthony Lakes ski area. The project proposes to treat the wildland urban interface (WUI) at Anthony Lakes Ski Resort, but does not propose clearing the trees on the runs of the ski area itself. Removal of some of the Alpine Red Fir will reduce its' competition with the Whitebark Pine and open up the runs for those who ski and ride the mountain.

Response – *Refer to response to Baker County Comments BCo7 and BCo10 for riparian treatments and corridors.*

The Anthony Lakes Ski Resort is managed under a Special Use permit. Management of recreation activities and opportunities in the ski area is outside of the scope of this project and would need to be covered under a separate planning process focusing on ski area management. The permit holders/managers of the Anthony Lakes Ski Area have been coordinated with regarding activities in the East Face project and have not expressed any concerns or interest in changing the character of the recreation experience at the ski

area.

EOMA3 - I am concerned about the proposed 38.5 miles of road that will be obliterated with this project. Baker and Union County citizens must be able to look at each road proposed for closure, and be certain these roads are not needed for present or future use of the forest.

Response – *The proposed action document for the East Face project was mailed to over 210 forest users, adjacent landowners, and concerned publics on January 15, 2015 which included a detailed description and maps of all proposed activities (including the post-sale road management plan) in the East Face project. These same documents were also posted on the forest website at the same time. A news release for the scoping period for the East Face project seeking public comment was issued on January 21st, 2015 which was published in several newspapers in northeast Oregon including The Observer, The Chamber Times, and the East Oregonian. Multiple presentations and approximately 5-6 public field trips have been given to the Wallowa Whitman Forest Collaborative which is a public group of more than 40 individuals and organizations working on large scale landscape projects including East Face. Presentations have also been made at the Small Woodlands Association. Refer to pages 7 and 8 in the East Face EA.*

The interdisciplinary team involved in this project did a site specific roads analysis for all the roads in the project area and identified which roads would be needed for future management of forest resources and for firefighting access. Roads where a specific need for firefighting access was identified would be closed by gates to facilitate easy re-entry in case of need. Additional road access is proposed within the middle of the project area. Public comment during the scoping for this project generally supported the post-sale road management plan expressing concern about the poor condition of the roads within the project area and the impacts they are having on big game security and their use of the area.

EOMA4 - In addition, no geologist or minerals specialist is listed as being involved in the preparation of this document. Appendix D states there are no approved Plans of Operation in this area. There are, however, mining claims. I could not research this because the maps included with this project do not have any sections. Without this information, I cannot do an LR2000 report from BLM. The information on mining claims with the vegetation management area, and the roads these miners use, should have been included in the-EA.

Response – *Refer to response to Baker County Comment BCo13.*

Forest Access For All (FAFA) Comments

FAFA1 - FAFA encourages all projects focusing on the improvement of forest health. We do not endorse these projects being used as a back door to implementing the travel management plan.

Response – *Road management is a closely connected action to vegetation management activities. As directed by the Forest Supervisor, who is the Responsible Official for this project, the interdisciplinary team involved in this project did a site-specific roads analysis for all the roads in the project area and identified which roads would be needed for future management of forest resources and for firefighting access. Roads where a specific need for firefighting access was identified would be closed by gates to facilitate easy re-entry in case of need. Additional road access is proposed within the middle of the project area.*

Public comment during the scoping for this project generally supported the post-sale road management plan expressing concern about the poor condition of the roads within the project area and the impacts they are having on big game security and their use of the area.

This project does not designate roads, trails, or areas where motor vehicle use would be permitted. It also does not manage off road motor vehicle use. Management of the current cooperative closure areas would remain current management except for under Alternative 5 which would extend the closure period through all big game hunting seasons.

FAFA2 - Any new road construction needs to stay in place to be utilized for the health and welfare of the local citizenry. The project calls for reopening 107 miles of roads, these need to remain open. FAFA challenges the forest service to produce the documents that were necessary to originally close these roads. Obliterating roads is a wanton waste of a resource. Obliterating 38.5 miles would be considered criminal in some circles. Do I need to list all the reasons for leaving roads? The number one risk to forest health, FIRE, would top any list. FAFA, will take a hard look at any inconclusive pseudo-science used to justify road closures.

Response - *No new specified road construction (permanent roads) is being proposed in the East Face project. Only generally short road segments which would dead end in a harvest unit are being proposed for temporary use to facilitate sawlog removal. In order to be cost effective, these temporary roads are not designed to remain on the landscape long term and are not needed for management in the long term. They are removed in order to prevent resource impacts.*

A database error was identified in the list of roads proposed for decommissioning resulting in the total miles of roads proposed for decommissioning being reduced from 38.5 miles to 31.3 miles. The maps in Appendix A of the EA are correct, the database error has been corrected in the Final EA.

Road management and vegetation/forest management are closely intertwined as connected actions due to the need for road access to accomplish timber harvest and fuel reduction activities. Research has also proven that use of motor vehicles on roads and disturbance cause by logging and fuel reduction activities impact how deer and elk will use the landscape (refer to effects in EA pages 146-153). Post-sale road management was a part of the proposed action for this project which included maps displaying which roads are being proposed for decommissioning. Road access was also identified as an issue during scoping; however, comments received focused on support for the proposed decommissioning, the poor physical condition of roads within the project area, lack of support for temporary road construction, and the negative impacts roads have on natural resources including big game and water quality (EA, pages 16-17).

As described under the Road Access issue, 65% of the roads within the project area are currently managed as closed roads with quite a few of them already grown in from lack of use over the years. Only 2 miles of the 31.3 miles proposed for decommissioning are currently open, the remainder are managed as closed. A site specific roads analysis was completed on a road by road basis to recommend the appropriate management for each road to protect natural resources, meet resource management objectives, provide appropriate access for firefighting and management of forest resources, and to meet Forest Plan direction. Forest plan standards call for obliteration of roads not needed for future

management returning them to resource production based on management area direction (WWNF Forest Plan, page 4-36). The roads proposed for decommissioning in this project area were currently managed as closed, identified as not needed for future resource management and either provided duplicate access to areas already accessible by other roads or they were identified as poor quality drawbottom roads impacting aquatic resources.

Approximately 50% if the roads proposed for decommissioning are grown in and not receiving any use. About 22% of the roads are creating water quality issues and another 5% are closed and not receiving any use. The remaining roads are closed and use is either negligible or did not have information documented for them providing duplicate access to areas with other road access already available. Nearly 85% of the roads are less than a mile in overall length with the majority of them being less than 1/4 mile long.

With the exception of the proposal to leave three roads currently being managed as closed and decommissioning one road that is currently open, management of the remaining 304 miles of roads within the project area would remain the same under all action alternatives.

FAFA3 - This project is in close proximity to communities in three counties, Union, Wallowa, and Baker. The project by whatever name you choose is basically a WUI. At this point \$1.4 million has been distributed to private land owners. The material I'm reading leads me to believe more money will be directed to private lands. We assume this assures any roads accessing the national forest through private property will remain open.

Response – *We have no knowledge related to any road management proposed on private lands. The Forest Service will be acquiring right-of-way access for 0.37 miles of road 7302 across privately private lands adjacent to the project area in order to facilitate logging and fuel reduction activities. Access is not going to be needed in the long term on 2.17 miles of the private road north of Pilcher Creek Reservoir which accesses forest road 4315952 and a temporary road use permit will be acquired. If the road is needed for public access and future management, easement acquisition will be pursued (EA, page 28, refer also to Alternative maps in Appendices A-C).*

Hells Canyon Preservation Council (HCPC) Comments

HCPC1 - Hells Canyon Preservation Council supports and appreciates Forest Service efforts toward ecosystem restoration in the East Face project area including the following:

- Improving fish habitat by removing the culvert on Wolf Creek that is currently a fish passage barrier.
- Protecting scenic resources during project development and implementation.
- Protecting snags during project development and implementation.
- Decommissioning and closing roads for the benefit of clean water and habitat for fish and wildlife.
- Staying out of IRAs as required by the 2001 Roadless Rule.
- Protecting larger trees (≥ 21 inches DBH) as required by the Eastside Screen.
- Identifying the importance of wildlife habitat, management indicator species, and habitat connectivity in the Purpose and Need and proposed action for the project.
- Treatments with the aim to protect whitebark pine.

- Adapting treatment prescriptions to improve deer and elk habitat
Aspen enhancement in non-commercial treatment units
- Including some protections in marking-guides for trees with old growth characteristics
- Performing hand-work only in whitebark pine habitats
- Re-closing of roads after project
- Prescribed burning across boundaries into Elkhorn Wildlife
Area Hand-work-only /non-commercial treatments in RHCA's

Response - *Thank you for your support of and participation in the East Face project.*

HCPC2 - Hells Canyon Preservation Council is interested in learning more about the specifics of the forest treatments proposed for "Priority One" areas (all WUI areas and areas within 1.5 miles of private land). Since most of the boundaries between National Forest and private lands occur at lower elevations, we would expect to find dry forest types in these areas. Dry forests within the WUIs and close to Forest boundaries would be expected to provide the best opportunities for fuel reduction and vegetation treatments.

Response – *The forest treatments in Priority one (P1) are similar to other areas in East Face. P1 areas were established as areas within 1.5 miles of private land or in a WUI where treatments were needed due to a fuels concern. Silviculturally, these stands were reconned to determine if treatments would provide for increase in tree growth and vigor, increase resistance to insect and diseases, as well as, reducing the fire risk. In addition to commercial treatments in P1, there are 5,775 acres of non-commercial treatments. Commercial treatments will reduce crown bulk densities, ladder fuels, and will have post-sale fuels treatments to reduce fuel hazards. Those post-sale fuels treatments will be similar to treatments conducted in non-commercial treatments and include a mix of precommercial, jackpot burning, grapple piling and/or slash busting.*

See also the response to Boise Cascade comment #BC4.

HCPC3 - Forest treatments in moist forests and cold forests do not have a solid basis in science-based restoration. Any treatments of the moist and cold forests in the project area should be limited to non-commercial treatments of smaller trees in strategic locations. The Forest Service's Pacific Northwest Research Station recently published a general technical report that synthesizes a large body of scientific information on mixed moist conifer forests, titled *The Ecology and Management of Moist Mixed-Conifer Forests in Eastern Oregon and Washington: A Synthesis of the Relevant Biophysical Science and Implications for Future Land Management*. This report is intended to assist natural resource managers and policymakers in applying the best available science information to the management of moist mixed-conifer forests in eastern Oregon and Washington. This synthesis report states that moist plant associations in the Blue Mountains, such as those in the grand fir series, were characterized by moderate to high severity fire with fire return intervals longer than 50 years. The synthesis report also states that wetter mixed conifer forest with fire return intervals over 50 years do not have the restoration needs associated with changed fire regimes (Stein et al 2014, pp. 9, 37-38).

The best-available science, including the moist mixed conifer synthesis, strongly urges forest managers to mimic natural disturbance regimes. The moist and cold forests in the East Face project area are characterized by moderate-to high-severity fires with long fire return intervals. Thinning in these forest types would not mimic natural disturbance patterns, but would instead

create unnatural conditions. Most species in these forest types are adapted to regeneration following a stand replacement fire. Thus, the proposed action would result in a departure from historical conditions.

Response: *We agree about the need to create some heterogeneity on the landscape in the cool/moist potential vegetation groups and have incorporated a variety of treatments to create diversity and mimic natural disturbance processes. As an example, patch openings are proposed in lodgepole dominated stands to emulate fire and insect disturbance and promote greater conifer diversity by retaining more fire tolerant species within openings. The intent of these treatments is to begin breaking up some of the homogeneous acres of suppressed lodgepole pine creating some diversity in stand structure and composition. Additionally, marking guides include retention of variable spaced trees and clumps, and precommercial thinning treatment designs include retention of untreated patches consistent with emulating mixed severity disturbances within moist mixed conifer forests .*

We recognize that fire is a natural part of the forces that shape a landscape and the intent of this project has never been to “fireproof” it. The strategically located fuel reduction areas were designed to “compartmentalize” the project area and provide for smaller blocks of the landscape within which fire managers could safely fight and manage fires from to hopefully reduce the potential size and intensity of a wildfire on the landscape, not eliminate it. Given the types of potential vegetation groups within this project area and their juxtaposition to private land interface areas, WUIs, and vast acres of inventoried roadless areas, fire managers are seeking to successfully utilize and manage fire on the landscape that are hundreds of acres in size instead of thousands of acres in size in order to not only create the heterogeneity desired but also to continue to provide recreation opportunities, habitat for endangered species, water for agricultural needs, and protect private lands and facilities.

Prior to European settlement moist mixed conifer forests consisted of large, old ponderosa pine, Douglas, fir in the upper canopy with western larch and grand fir occasionally present. Fire suppression and past management has altered this condition (Stine et al, 2014). Mimicking natural disturbance regimes is not always possible after a century of management; the patterns of composition and structure have been altered and as a consequence so have the disturbance regimes (Stine et al, 2014). Topographical and edaphic patterns of landscape can provide a template for restoration (Stine et al, 2014). Stine et al (2014) recommends that on north aspects and valley bottoms which are typically denser and have moderate to high severity fires, free thinnings can help achieve restoration and fire tolerant species can be promoted by regeneration treatments. On south aspects and ridgelines fire tolerant species should be favored to discourage spread of root diseases; stocking levels should support surface fires and endemic levels of beetles. Stocking can be maintained by low-free thinning and prescribed fire.

Location of adjacent patches with different disturbance regimes affects moist mixed conifer patterns. Adjacent to wet, cold areas the fire return interval is longer and adjacent to dry areas the fire return interval is shorter (Stine, 2014). Treatments in East Face will reflect this process by reducing density and favoring more seral species in moist upland forest units adjacent to dry upland forests and more moderate stocking and more late seral species in moist up[land units adjacent to

wet, cold areas. *Treatments proposed for East Face will favor using a mixed fire severity template in moist mixed conifer forests. Mixed fire regime is one where first order fire effects are highly variable and has mixed patterns of lethal and non-lethal outcomes (Perry et al, 2012). Mixed severity fire can create a patchiness of forest structure, composition and seral status (Perry 2012). Taking in to account different target densities in moist/cold forest along with areas not treated will assist in creating multiple developmental pathways for stands across the landscape.*

Thinning densely stocked mid-aged stands can increase tree vigor, encourage understory growth, and enhance structural complexity (Franklin, no date).

HCPC4 - There is substantial evidence that thinning in the moist- to wet-end of the grand fir plant association series can increase the risk of wildfire. It should be recognized that logging can exacerbate fire risk by removing fire-resistant trees, putting more fine fuels on the ground, and increasing fuel loading by spurring the rapid growth of small shrubs and trees (see Hanson and Odion, 2006; Raymond and Peterson, 2005). There is also evidence that fires may burn more severely in early seral vegetation, and burn less severely in closed canopy forests. This may be related to the fact that closed canopy forests maintain a cool-moist microclimate that helps retain higher fuel moisture and more favorable fire behavior (Odion 2004). Recognizing logging's potential to increase the fire risk confirms the importance of applying fuels reduction treatments in ecologically appropriate areas. The mixed conifer zone is in general not an appropriate area for fuels reduction work. Even when extensive thinning occurs, this zone will still burn when climatic conditions are conducive for wildfire (extreme heat, drought, or winds).

Response: *The effects of opening stands and project created slash on fire behavior is described in detail for each action alternative in the EA pages 80-91. These effects are based on the residual stocking densities projected from the treatment prescriptions described in the EA on pages 21-22.*

HCPC5 - "Priority Three" areas are located outside WUIs, are more than 1.5 miles from private property, and are not part of strategic fuels break. We would not expect fuel reduction treatments in these areas to provide significant protection to private property. Proposed treatments in Priority Three areas seem to be based in large part to restore HRV. Please see the section related to HRV below. Additionally, forest treatments in moist forests and cold forests do not have a solid basis in science-based restoration. It seems likely that a significant portion of these treatments would be located within moist and cold forests. In general, treatments in Priority Three seem to be of questionable ecological value.

Response - *Priority area 3 stands are stands where a silvicultural need to treat the stand was identified during field reconnaissance; however, it was not located within a WUI, along the private land interface, or along strategic ridgetops and roads. The goals for these stands are to improve their health and vigor and promote forest structural and compositional conditions reflective of the historic ranges of variation (EA, page 20).*

HCPC6 - Mature forests are one example where historical baselines may not be particularly well suited as a measure for improving forest health. Some stands may have more grand fir and/or Douglas-fir now than compared to historical conditions. However, because of the absence of mature and old trees in the overall project area due to historical logging, protecting these mature stands regardless of species could be very important for maintaining structural heterogeneity and providing habitat for wildlife. Brown et al. (2004) states:

Past management practices may have led to development of old-growth stands with “unnatural” multiple canopy layers or accumulations or snags and logs, but these areas may provide key habitat that compensates for the loss and degradation of these habitat elements elsewhere (ICBEMP 2000; Wisdom et al. 2000). It may often be appropriate to attempt to secure such habitats from wildfire by treating adjacent areas (Agee 1996, 1998). Attention should be given to protecting large and old trees (Henjum et al. 1994, Allen et al. 2002). Large fir trees, especially those with heartwood decay, provide important habitat for many species (Bull et al. 1992, 1997; Bull & Hohman 1993), and efforts to “cleanse” the landscape of true firs should be avoided.

Another example where HRV may not be a good management target is for multi-storied mature forests. These multi-stratum forests are at a higher risk to disturbance than single-stratum forests. Management actions that reduce these multi-stratum forests should be kept to a minimum (Wales et al. 2007). Large wildfire activity is increasing across the western U.S. due to increased spring and summer temperatures and longer wildfire seasons (Westerling et al. 2006). This trend is expected to continue. Wales et al. (2007) cautions that active management approaches that reduce closed canopy forests could overshoot reductions in HRV.

Response – *We agree that protecting mature stands regardless of species is important in maintaining habitat for old growth species. Old Forest Multi Story stand structure (specifically within the moist PVG) and Old Forest Single Story stand structure (in all PVGs) are considered below the historic range of variation within the project area watersheds (Refer to the EA, page 100). As such, the majority of mature stands within the project area will not be disturbed, with the intent of continuing to provide habitat for old growth species. No trees over 21 dbh will be removed regardless of species. Some commercial and non-commercial treatment is proposed in areas adjacent to multi-storied mature stands to help protect existing mature stands from future wildfire activity. Any commercial activity within moist OFMS takes place within priority one areas whose purpose is to provide a defensible fuel profile zone to help protect private land and the WUI.*

HCPC7 - Past and on-going management actions have had a very large impact on the type of forest structure available to wildlife today in the project area. Adjacent to the Wallowa-Whitman National Forest there are typically industrial forest lands which have been heavily logged. These activities on private land have likely displaced wildlife onto the project area.

Response – *Past effects of private land management as it impacts forest service land is incorporated into the existing conditions. On-going and future management actions on private land are addressed under the cumulative effects (Please refer to Appendix D).*

HCPC8 - NFMA’s implementing regulations require the consideration of the “best available science” for all site-specific projects. 36 C.F.R. § 219.11 (2008); 36 C.F.R. § 219.35(d)(2000). Under the 2008 NFMA regulations, this requires documenting “how the best available science was taken into account in the planning process within the context of the issues being considered;” and “that the science was appropriately interpreted and applied.” 36 C.F.R. § 219.11(a).

In this instance, the Forest Service must consider the best available science including but not limited to the topics of moist mixed conifer forest ecology, conversion of OFSS to OFMS, livestock grazing and forest health, wildlife connectivity, fire ecology, old growth, and roadless

areas. In order to meet the best available science requirement, please review the literature cited in the reference section of these comments.

Response – *Refer to East Face responses in blue to each of the literature cites at the conclusion of HCPC Comments.*

HCPC9 - NFMA and its implementing regulations require the Forest Service to manage forests for viable populations of native vertebrate and desired non-native species. Diversity is assessed by identifying Management Indicator Species (MIS), monitoring MIS, gathering inventory data on MIS, and analyzing the impacts of logging (and other management activities) on MIS, because MIS are an indicator of the overall diversity of the forest. 36 CFR § 219.19 et seq. NFMA regulation 219.19 requires that, “fish and wildlife habitat shall be managed to maintain viable population of existing native and desired non-native vertebrate species in the planning area.” Furthermore, the Forest Service Manual states the agency must manage “habitats for all existing native and desired nonnative plants, fish, and wildlife species in order to maintain at least viable populations of such species.” FSM at 2670.12.

Response - *Effects to management indicator species and species viability were covered in depth in the EA on pages 106-122, 146-153, and 186-191.*

HCPC10 - The proposed action includes temporary road construction and commercial logging within ecologically significant unroaded areas. Unit 104 and 105 (and associated temporary roads) are located within the almost 5,000 acre Bear Butte unroaded area. We request that all units within ecologically significant unroaded areas/undeveloped lands be dropped from the proposed action.

Scientific research clearly enumerates the many reasons why remaining roadless areas should be protected. In national forests, roadless areas contain certain attributes with independent environmental significance not found in areas of national forests fragmented by roads. These attributes include high quality and undisturbed soil, water, and air; sources of public drinking water; diversity of plant and animal communities; habitat for threatened, endangered, proposed, candidate, and sensitive species and for those game and non-game species sensitive to human disturbance; sites for high-value backcountry recreation; reservoirs of genetic diversity; reference landscapes; living laboratories for natural ecological processes; natural appearing landscapes with high scenic quality natural integrity and apparent naturalness; sinks for absorbing carbon emissions; solitude and remoteness; and traditional cultural properties and sacred sites. Because they are so scarce, the ecological services these roadless areas provide are unique, and increasingly valuable. As healthy natural ecosystems, roadless areas generate a diverse stream of economic benefits to nearby landowners, those who hunt, fish, or recreate on national forests, those who depend on these lands for reliable supplies of clean water, and to those who consider protection of these unique natural areas an important component of their overall quality of life.

As stated above, we request that the proposed action be modified to drop any units within ecologically significant roadless areas. Having such units within the proposed action creates unnecessary controversy. As an active member is the Wallowa-Whitman Forest Collaborative Group we would like to see this project move forward with collaborative support on a quick timetable. Including controversial activities – such as logging within roadless areas – within a proposed action creates challenges for finding consensus from the broad group of stakeholders that make up the Wallowa-Whitman Forest Collaborative. Such activities are more appropriately analyzed as an alternative to the proposed action.

Response – *Alternative 3 was designed specifically to respond to this concern. See EA page 33. The EA describes the effects of all the alternatives on this area on pages 140-146.*

HCPC11 - The Eastside Screens were adopted in the early 1990's in response to concerns about over logging of the forests east of the Cascade Crest in Oregon and Washington. The intent of the Screens was to retain old growth trees and move towards the HRV across the landscape. The Screens amended the Wallowa Whitman Forest Plan to, among other things, prohibit the logging of live trees equal to or larger than 21 inches DBH and also prohibit timber sale harvest activities within late and old structural stages that are below their HRV. The Wallowa-Whitman has approved at least 15 amendments to the Eastside Screens since they were adopted.

A recent case challenged the Snow Basin project on the Wallowa-Whitman for among other things its use of site-specific amendments to the Eastside Screens. Plaintiffs challenged the Forest Service decision to use a site-specific amendment on the basis that site-specific amendments are intended to address unique characteristics of a particular forest area, rather than conditions that are common throughout the entire forest or region. Plaintiffs argued that because the Snow Basin project area did not have distinguishing characteristics, a site-specific amendment was not justified. *League of Wilderness Defenders, et al. v. Connaughton, et al.*, No. 3:12-cv-02271-HZ (D. Or. Dec. 9, 2014).

The *League of Wilderness Defenders* court found the decision to make site-specific amendments to be a violation of NFMA because the Forest Service failed to explain what conditions existed within the project area that supported selection of a site-specific amendment over a forest-wide amendment. *Id* at 54-55.

Plaintiffs also challenged the Forest Service's choice to limit its cumulative impacts analysis of a proposed Eastside Screens amendment to only the project area rather than analyzing the impacts of the project's amendments with all other past, present, and reasonably foreseeable Eastside Screens amendments. The Court agreed with Plaintiffs and held that the Forest Service's failure to analyze other similar site-specific amendments throughout the Wallowa-Whitman violated the requirement to take a "hard look" under NEPA. *Id.* at 17-18.

As in Snow Basin, the proposed amendment to the Eastside Screens does not address a site-specific issue. In order to move forward with this portion of the East Face project proposal, the Forest Service must do a forest wide significant amendment to the Eastside Screens and analyze the cumulative impacts of the proposed Eastside Screen amendment along with all other past, present, and reasonably foreseeable Eastside Screen Amendments.

Response - *Section 1 of the proposed Forest Plan Amendment (EA page 26-27) is site specific because the four LOS stands (totaling 97 acres) proposed for fuel reduction work have 4 location-specific concerns not found in any of the other amendments previously completed on the Wallowa-Whitman National Forest. These stands are located within or immediately adjacent to the Anthony Lakes and Rock Creek Bulger Flats WUIs (which contain numerous homes, buildings, and developed facilities), adjacent to 20 miles of private land interface, are very close to or immediately adjacent to a State Scenic By-way, and are immediately adjacent to the Twin Mountain inventoried roadless area. None of the other forest plan amendments done on the forest (refer to Appendix D, pages 12-13 which describes every LOS Forest Plan Amendment on the WWNF) have this same site specific*

need for fuel reduction work to retain the integrity of the defensible fuel profile zones (DFPZs) proposed in this project.

The cumulative effects of this proposed forest plan amendment was completed at the Forest level (refer to Appendix D, pages 12-13 and EA pages 104-106) and included all past, present, and reasonably foreseeable future forest plan amendments on the WWNF for treatment in LOS below HRV.

HCPC12 - The Scoping Notice states that “due to lack of direction from the Forest Plan to provide fuels reduction criteria for entering [MA-15]..., the ID team with Forest support, recommends that a site specific non-significant Forest Plan amendment be included as a component of the proposed action in order to reduce fuels and modify fire behavior in a portion of the allocated old growth [located within the project area]. Scoping Notice p. 9.

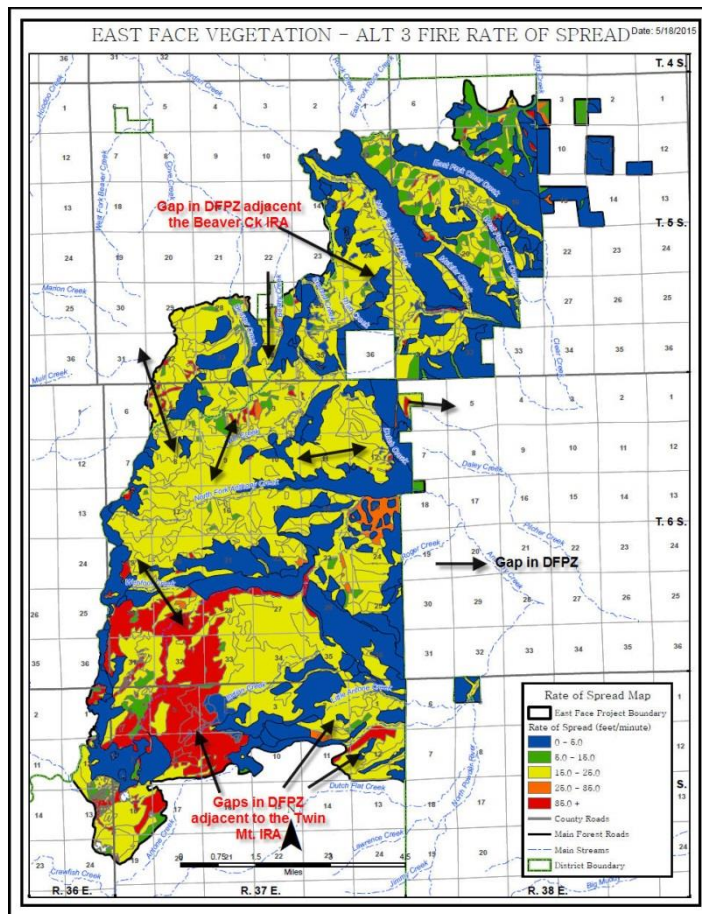
The Wallowa-Whitman has proposed site-specific amendments to log within MA-15 areas on numerous timber projects. For example, the forest has approved or proposed site-specific amendments to the prohibition on commercial logging in allocated old growth areas (MA-15) as part of the Mt Emily Fuels Reduction Project, the Cove II WUI Project, the Lower Joseph Creek Restoration Project, and the Little Dean Vegetation Management Project. All of these amendments have been justified by the need to reduce fuels and modify fire behavior within these old growth reserves. This shows that these amendments do not address a site-specific issue based on unusual or unique aspects of the site itself when compared to the forest generally.

Rather, they are a significant change to forest plan direction. Therefore, the Forest Service must include a forest wide significant amendment as part of the proposed action in order to move forward with the part of the project proposal. The agency must also analyze the cumulative impacts of the proposed amendment to the prohibition on commercial logging within MA-15 along with all other past, present, and reasonably foreseeable like amendments.

Response - *Section 2 of the proposed Forest Plan Amendment (EA page 27-28) is site specific because the one LOS stand (totaling 75 acres) proposed for fuel reduction work have 4 location-specific concerns not found in any of the other amendments previously completed on the Wallowa-Whitman National Forest. This stand is located within or immediately adjacent to the Rock Creek Bulger Flats WUI (which contain numerous homes and buildings), adjacent to 20 miles of private land interface, is immediately adjacent to a State Scenic By-way, and is immediately adjacent to the Twin Mountain inventoried roadless area.*



The Mt. Emily project had a non-significant forest plan amendment for treating 158 acres of MA15 and the Cove II WUI project had a non-significant forest plan amendment to treat 137



acres of MA15. The Lower Joseph and Little Dean projects did not have forest plan amendments for treating in allocated old growth. Total acres treated combined with those proposed for treatment in the East Face project equal 370 acres if the approximately 36,750 acres allocated to MA15 in the 1990 WWNF Forest Plan. Therefore, approximately 1% of the acres allocated to MA15 on the entire WWNF would be affected by these 3 projects. The previously treated stands remained allocated to MA15 and maintained their old growth characteristics. The one stand to be treated in East Face focus on the small ladder fuels within this stand as seen in the picture above.

While the other two projects with forest plan amendments were within WUI's they did not have the site specific complexity of issues associated with this one stand and the site specific need for fuel reduction work to retain the integrity of the defensible fuel profile zone (DFPZs) proposed in this area in this project. Not treating this stand would

result in the gaps in the DFPZ displayed in the southeast corner of this map for Alternative 3 which translates to areas vulnerable to a fire coming out of or going into the Twin Mountain Inventoried Roadless Area.

HCPC13 - Temporary roads are not temporary in impact. Temporary roads left in a state of non-use can have impacts on forests and soils that last for decades. The public often continues to use these roads long after implementation of camouflaging and other activities designed to leave them in a state of non-use. As a result, soil compaction/disturbance and sedimentation impacts will continue to persist. The permanent impacts of temporary road construction have been thoroughly documented (e.g., Beschta et al., 2004; Karr et al., 2004). Such long-term damage has even been acknowledged by the USFS (Rhodes, 2007).

Additionally, the re-opening of closed or unclassified roads for access, and then re-closure following treatment activities has very serious ecological impacts. Extensive and intensive road reconstruction greatly increase road impacts on watershed systems, as documented, very graphically, in Karr et al (2004). Reconstruction impacts are extremely significant because the elevated sedimentation they cause is already ubiquitous water quality problem throughout the West and a major cause of the loss of aquatic biodiversity.

The project proposal indicates that 12.6 miles of temporary roads will be used to access some proposed units and that 78 miles of closed road would be temporarily re-opened and/or

reconstructed to access treatment units for the duration of activities. We recommend that potential units that can only be accessed with temporary roads should either be dropped and considered as wildlife refugia or else be non-commercially treated by hand crews. Regarding re-opening closed roads, unless there are roads which are currently causing resource damage and needs to be restored, Hells Canyon Preservation Council recommends that units that would be accessed using closed roads requiring reconstruction be treated as wildlife refugia or precommercially treated. Hells Canyon Preservation Council also requests that any alternatives that propose temporary road building include an analysis of the trade-offs associated with the purported benefits of the treatment versus the negative impacts to wildlife, soil structure, hydrology, invasive weed spread, etc from temporary road building and road reconstruction.

Response - *Alternative 3 was developed following scoping to respond to this issue. The trade-offs and effects (benefits vs. negative impacts) are described in the effects analyses for wildlife (EA pages 98-122, 146-153, 191-204, 207-208), soils (EA pages 209-224), hydrology (EA pages 155-177), invasive weeds (EA pages 224-240).*

HCPC14 - The East Face project may significantly impact the environment with substantial greenhouse gas emissions as well as direct, indirect and cumulative effects on forest carbon stores and sequestration rates.

In *NHTSA*, the Ninth Circuit concluded that the “impact of greenhouse gas emissions on climate change is precisely the kind of cumulative impacts analysis that NEPA requires agencies to conduct.” 538 F.3d at 1217. There is no scientific question that incremental increases in greenhouse gases can have a cumulatively “significant” effect on climate change. Thus, NEPA clearly requires the pending analysis to consider the cumulative impact of project effects on climate change.

Response - *Climate change is addressed in the EA on pages 4, 6, 19, 97-98, 130-131, 133, 136, 137, 191, 227, 240, 258-259.*

HCPC15 - One of Hells Canyon Preservation Council's top concerns is the impact of the proposed project on wildlife habitat and wildlife connectivity. Logged forests result in habitat degradation including a lack a snag habitat and down wood, habitat fragmentation, poor elk security, loss of big game cover, and insufficient large and old trees. All of these impacts to wildlife must be adequately considered in the pending NEPA analysis.

Upon review of 22 years of scientific recommendations it was found that the most frequently cited climate change adaptation strategy for biodiversity management is to increase connectivity (e.g. design corridors, remove barriers for dispersal, locate reserves close to each other, and reforestation). This allows species to adapt through migration, dispersal and movement, but also requires reduction of stressors. Effective National Forest Service planning and management of public lands should incorporate measures for identifying and protecting wildlife corridors while simultaneously reducing stressors.

For many of our native wildlife species, survival depends on movement – whether it be day-to-day movements, seasonal migration, gene flow, dispersal of offspring to new homes, re-colonizing an area after a local extirpation, or the shift of a species' geographic range in response to changing climate conditions. For most animals and plants, all of these types of movement require a well-connected natural landscape. See Western Governors' Association's, Wildlife Corridors Initiative (June 2008 report), p.2. There is abundant scientific evidence that loss of

habitat connectivity has profound negative impacts on fish, wildlife and plant populations. Id. at 3 (*citing* Wilcove et al. 1998, Crooks and Sanjayan 2006). Alarmingly, habitat loss and fragmentation is a cause of decline for about 83 percent of U.S. species. Id. at 4 (*citing* NatureServe and TNC 2000). Climate change is accelerating and increasing connectivity is widely recognized as one of the best adaptation measures managers can take. This vital role that habitat connectivity plays in ensuring long-term species' viability and the disastrous effects of habitat fragmentation has inspired a growing call to action to address these issues through big-picture collaborative efforts. A primary example is the Western Governors' Association's (WGA) recent adoption of Policy Resolution 07-01 (adopted February 27, 2007), Protecting Wildlife Migration Corridors and Crucial Habitat in the West and preparation of the Wildlife Corridors Initiative (June 2008 report).

Hells Canyon Preservation Council is appreciative that "Connectivity Corridor Units" have been identified in the proposal and that they would be managed with a goal to "to maintain and enhance their canopy closure and structural complexity." However, with this goal in mind, we question the need to enter these forests at all—particularly in the case of commercial logging treatments.

In the project design and implementation, movement to and from large core habitat areas should be consciously planned for. All roadless areas such as uninventoried roadless areas and any areas with potential wilderness quality should be protected. The functionality of riparian areas as wildlife corridors should be considered. While not all species would be covered by this approach, these areas are likely natural wildlife corridors where extra-large buffers or some other approach would help plan for day-to-day wildlife movement and dispersal needs. Cumulative impacts to wildlife must be addressed.

Response - *The project area was analyzed at a watershed level to identify areas of landscape connectivity that could provide breeding habitat and movement areas for old growth dependent species ((Refer to Figure 2 in the EA on page 101, Watershed Connectivity within the East Face Project Area). These areas contain the majority of OFMS and MA-15 within the project area, were built into the project design and none of the proposed treatments fragment these identified areas. Proposed treatments along the edges of denser, multi-storied stands focus on drier, south facing slopes that typically would have a more frequent, low-severity regime than the dense stands. By moving these stands toward historical conditions we reduce the risk of stand replacing fires in inappropriate places and protect areas valuable to old-growth species, allowing the stands to develop high canopy cover and function as important habitat. In addition to these large landscape level corridors, connective corridors between stands of old forest were also defined within the project area which generally included the entire unit, not the minimum 400' described under Screens. The effects of these corridors are described in the EA pages 102-104.*

HCPC16 - Hells Canyon Preservation Council encourages the Forest Service to design vegetation and fuels reduction projects that maintain adequate wildlife cover for big game. Hells Canyon Preservation Council has grown increasingly concerned about the impacts of widespread reduction of wildlife cover through mechanical means and fire.

Response - *A historic range of variation analysis within the project watersheds shows that there is an overabundance of understory reinitiation structural stage, characterized by small dense understory trees, and a deficit in stand initiation*

structural stage, which would be characterized by low canopy cover and multiple grass, forbs and shrubs (Refer to the EA page 6). This is echoed in the Habitat Effectiveness Index model that was run for elk which found the existing Cover: Forage ratio to be 71:29, with an optimal ratio of 40:60 (Refer to the EA page 148). These findings indicate a large departure in the amount of forage that was historically present and the current amount and distribution. Refer to the EA, page 151 for an analysis of the cover conversions by action alternative.

HCPC17 - Through the project design and implementation, the Wallowa-Whitman National Forest must demonstrate that it is meeting its mandate to maintain viable populations of Northern Goshawk, Pileated Woodpecker, Three-toed Woodpecker, White-headed Woodpecker, Lewis' Woodpecker, American Marten, and any other Sensitive species or MIS. It should describe the quantity and quality of habitat necessary to sustain the viability of the species in question and explain its methodology for measuring this habitat. Additionally, American Marten have been documented within the project area. The project must incorporate the known site-specific data on marten into its viability analysis.

***Response** – A population viability analysis at the forest and watershed level was done in 2011 for American marten, Northern goshawk and pileated woodpecker (refer to Viability Determination sections for American marten, Northern goshawk and pileated woodpecker page 106, 111, 117). For more in-depth information on the methodology behind these assessments, please refer to the full-length assessments in the project record and the associated peer-reviewed literature scales. The presence of marten was detected in 2014 in areas of historical use (See image “Watershed Connectivity within East Face Project Area” page 101 in the EA) These historical locations were used as verification within the marten viability analysis.*

A DecAID analysis was used to analyze habitat for primary cavity excavators (Refer to EA page 193-197). For a more in-depth DecAID analysis, please refer to the wildlife specialist report in the project record. The DecAID analysis provides a comparison of historical conditions to current conditions. By managing habitat similar to historical conditions, i.e. promoting HRV stand structure and not removing any large snags, it is assumed that remaining habitat will be adequate to ensure population viability because species survived those levels of habitat in the past to be present today (Landres et al. 1999). For more in-depth information on the methodology behind DecAID please refer to <http://www.fs.fed.us/r6/nr/wildlife/decaid-guide/distribution-analysis-green-tree.shtml>.

HCPC18 - Thomas, et al. (1988), developed a Habitat Effectiveness Index (HEI) model for estimating elk habitat effectiveness on the landscape. This HEI was incorporated into the 1990 forest plan for the Wallowa-Whitman using seasonal restrictions, cover/forage requirement and road density standards and guidelines. There are, however, much more current methods to evaluate project impacts on elk habitat and its effectiveness.

For example, recent scientific information highlights the importance of distance from open motor vehicle routes (Rowland et al. 2000; Rowland et al. 2005).

Not only does the more recent scientific information identify open motor vehicle routes and the resulting impacts on the availability of forage as key determinates of habitat suitability and key determinates of habitat suitability, it also suggests a distance-band approach be used to address the impacts in addition to road densities. A method to evaluate effects of roads on elk using a

distance-band approach has been suggested both by Roloff (1998) and by Rowland et al. (2000), as described above. Based on radiolocations of elk at the Starkey Experimental Research Station, Rowland et al. (2000) found no relation between number of elk locations and habitat effectiveness based on open road densities. By contrast, the authors found a strong, linear increase in selection ratios of elk as distance to roads increased.

We request that the significance of the distance band approach be incorporated into the project design and implementation. Elk have great cultural and economic significance to local communities, first nation people, and the Nation. Impacts on elk from project activities warrant in depth analysis and the use of the best available science.

Response – *Please refer to the EA page 149 for the discussion of the distance band analysis and to Table 67 (Habitat-effectiveness index calculations for elk habitat within the East Face analysis area) for the incorporation of the distance band analysis into the HEI.*

HCPC 19 - There is a building scientific consensus that PACFISH/ INFISH standards are inadequate in protecting RHCAs On non-fish-bearing streams, RHCAs are only 150 feet from the edge of non- fish bearing perennial streams and only 100 feet wide around intermittent streams. As noted in the aquatic assessment for the Interior Columbia Ecosystem Management Project (ICBEMP) (Quigley and Alberide, 1997), these widths are inadequate to protect these types of streams from increased sediment delivery from upslope sediment production. Specifically, this assessment noted that these smaller, non-fish bearing perennial and intermittent streams are:

- More affected by sedimentation from sediment production accelerated by upslope activities than larger streams (pp.1365 to1366).
- A primary source of sediment supplied to fish bearing streams (p. 1366)
- Typically comprise the majority of the channel network and “...therefore strongly influence the input of materials to the rest of the channel system.” (p. 1366)
- Highly vulnerable to the impacts of upslope activities, because the likelihood for discernible instream effects increases with slope steepness and the erodibility of sideslopes (p. 1367); these smaller headwater streams tend to have steeper and more erodible sideslopes (p. 1371).

Even the PACFISH/ INFISH RHCAs on fish-bearing streams are not adequate to fully protect streams under all conditions. Quigley and Arbelbide (1997) noted that 300 foot wide RHCAs around streams might not be adequate to prevent increased sediment delivery to streams in some areas. There is a greater than 25 percent probability of sediment delivery to streams on a 30 percent slope with a 100-foot wide, fully functional, RHCA based on the analysis in Quigley and Arbelbide (1997). For slopes of 50 percent abutting intermittent stream channels, the aquatic assessment in Quigley and Arbelbide (1997) estimated buffer widths of more than 400 feet from each side of the stream would be needed to prevent sediment delivery in 95 percent of cases. The Draft EIS for the ICBEMP included methods to expand RHCA widths based on slope steepness, in order to provide more protection from sediment delivery to smaller streams (USFS and USBLM, 1997b). These methods result in RHCAs with widths significantly greater than 100 feet on intermittent streams with slopes greater than about 15 percent.

Other applicable scientific literature has noted RHCAs wider than those of PACFISH are

necessary to protect aquatic resources. Damage to headwater streams and riparian areas not only degrades habitats in headwater streams, but downstream habitats as well, because headwater streams provide most of the water and sediment for downstream reaches (Rhodes et al., 1994; Moyle et al., 1996; Erman et al., 1996). Due to their sensitivity, headwater streams need as much protection, or more, than larger downstream reaches if aquatic habitats and water quality at the watershed scale are to be protected (Rhodes et al., 1994; Moyle et al., 1996; Erman et al., 1996; Espinosa et al., 1997). Both Erman et al., (1996) and Rhodes et al., (1994) concluded, based on review of available information, that intermittent and non-fish-bearing streams should receive stream buffers significantly larger than those afforded by PACFISH/INFISH.

Response - *Sediment delivery also depends on the activity happening adjacent to the RHCA buffer. Forest Service logging systems vary depending on slope and using appropriate logging systems (suspension, for example) for commercial harvest outside of PACFISH/ INFISH RHCAs buffers would minimize ground disturbance, erosion and sedimentation to habitats downslope. There are very few commercial/mechanical units that have streams, and therefore RHCAs, within the unit and units that do have stream/RHCA have a minimal amount of stream length most <.1 mile). These are all Class 3 and 4, non-fishbearing streams. The vast majority of commercial/mechanical units were designed to avoid streams and RHCA areas.*

Units that treat RHCAs are hand treatment only and have been determined to not cause sedimentation to stream channels and aquatic habitats by treating only up to the “no activity buffer.”

Please see response to BMBP 11 regarding controversy over riparian thinning, FS methods for treatment in RHCA buffers (hand thinning only) and analysis of effects of riparian thinning in RHCAs regarding sediment, temperature and LWD recruitment. Please see response to BMBP13 regarding riparian conditions and the importance of microclimate (as it relates to RHCA buffers) in ecosystem management and its influences on biological processes and physical processes. See reference to study by Daneyh and Kirpes (2000) in Grande Ronde Basin as it relates to FS analysis of effects of RHCA treatments and “no activity buffers.” Please see response to comment BMBP 22 regarding non-commercial thinning in RHCAs.

HCPC20 - Logging activities have significant direct and indirect impacts on the surrounding land and soils. Soil conditions strongly influence long-term forest productivity, the composition and condition of vegetation, rates of vegetative recovery after disturbance, sediment flux, and the quantity, timing, and quality of water produced by major watershed, which in turn affect aquatic population and habitats. NFMA imposes the substantive requirement that the Forest Service maintain soil productivity in the forests it manages, and that forest plans contain standards and guidelines to achieve these mandates. 6 U.S.C. § 1604. In order to maintain, soil productivity, the Wallowa-Whitman Forest Plan requires that detrimental soil conditions not exceed 20 percent of the total acreage within an activity area. WWNF LRMP 4-21

In determining whether soil productivity is being maintained, the Forest Service cannot rely on assumptions, rather, it must determine pre and post soil condition based on field verification.

Response - *Field verification of existing detrimental soil conditions (DSCs) was completed on a subset of proposed East Face harvest units to determine a range of existing conditions*

within the project area. This was used as a baseline for estimating the accrual of DSCs expected by treatment type to determine compliance with LRMP standard of no more than 20 percent DSC within the activity unit. Post treatment monitoring will be completed on 10 percent of the treatment units to determine adherence to this standard (Soils report, page 13).

HCPC21 - The forests of the Blue Mountains contain many sensitive species including plants, lichen, mosses, bryophytes, and fungi. These species are poorly adapted to disturbance. It is imperative that these species are identified and protected as this project moves forward. Hells Canyon Preservation Council requests that all project activities are designed and implemented so that all species of concern are thoroughly protected.

Response - *As described in the EA on pages 53, 204, and 205 project design features providing buffers and avoidance of plant locations have been implemented to provide protection for all botanical species of concern.*

HCPC22 - Hells Canyon Preservation Council is supportive of the use of proactive fire to restore and maintain natural conditions, however, the ultimate purpose of these treatments should be to allow natural disturbance processes to reestablish. Therefore, Hells Canyon Preservation Council strongly encourages the Forest Service to couple these treatments with wildland fire use plans that allow land managers the ability to let wildfire increasingly perform its natural role. Wales et al. (2007) found that the natural disturbance patterns (as compared to suppression) resulted in the largest amount of all types of medium and large tree forests and best emulated the Natural Range of Variability for medium and large tree forests after several decades. Restoring the natural disturbances regimes and processes is the key to restoring ecosystem functionality.

Response – *“Wildland Fire Use Plans” under current forest plan direction are only appropriate in wildness areas. There is no wilderness within the proposed project area.*

The strategically located fuel reduction areas were designed to “compartmentalize” the project area and reduce the potential size of a wildfire on the landscape, not eliminate it. Given the types of potential vegetation groups within this project area and their juxtaposition to private land interface areas, WUIs, and vast acres of inventoried roadless areas, fire managers are seeking to successfully utilize and manage fire on the landscape that are hundreds of acres in size instead of thousands of acres in size in order to not only create the heterogeneity desired but also to continue to provide recreation opportunities, habitat for endangered species, water for agricultural needs, and protect private lands and facilities.

HCPC23 - The research clearly shows that livestock grazing changes forest dynamics in ways that alter natural fire regimes and vegetative species composition. For example, grazing reduces the biomass and density of understory grasses which otherwise outcompete conifer seedlings and prevent dense tree recruitment (Belsky et al 1997). Grazing has been shown to contribute to a change in natural fire frequencies and intensities (Campbell 1954, Zimmerman et al 1984). In addition, studies have shown that livestock also alter forest ecosystem processes by reducing the cover of herbaceous plants and litter, disturbing and compacting soils, reducing water infiltration rates, and increasing soil erosion. (See e.g. Allen et al 1989, Belsky et al 1997). Grazing also negatively affects water quality and seasonal quantity, stream channel morphology, hydrology, riparian soils, instream and stream vegetation and aquatic fish and wildlife (See e.g. Armour et al 1991, Belsky 1999)

Many peer reviewed scientific papers document these adverse impacts of grazing on wildfire, species composition and other forest ecosystem processes (see Livestock and Forest Health Bibliography in the Reference Section). Allowing grazing to continue within the project area will result in high density forest structure, lack of stand initiation structure, detrimental soil conditions and retarded RHCA conditions. Thinning, logging, and burning prescriptions, particularly within or adjacent to RHCAs, may result in increased livestock access to riparian areas.

We request that you reduce grazing activities within logged and burned areas to allow them to recover post project.

Response – *Livestock grazing is an ongoing activity within the East Face project planning area. Monitoring for LRMP and consultation standards is conducted as part of the allotment management. Livestock management following planned or unplanned activities such as logging, prescribed fire or wildfire may be modified to allow for achievement specific resource management objectives should monitoring indicate there is a need.*

HCPC24 - Invasive weed spread is having massive global consequences including reducing biological diversity, altering ecosystem processes, and promoting extinction (Vitousek et al. 1996). Hells Canyon Preservation Council recommends that the proposed project apply prevention standards to stop the initiation and spread of invasive plants. As you know, the first step for limiting invasive weed spread mandated by the Region 6 2005 *Invasive Plant Management Record of Decision*, is prevention.

Roads and trails serve as corridors for non-native invasions, and logging equipment is frequently cited as the key link in the transport and spread of invasive or noxious plants. In its pending Hells Canyon Preservation Council suggests that the final project include monitoring of the project area after completion so that weeds infestation sites can be identified and treated before spreading into adjacent areas. Reduction /elimination of temporary road building and road reconstruction minimizes disturbed soil conditions ideal for invasive weed spread.

Response - *Refer to Table 22 on pages 65 and 66 of the EA for noxious weed monitoring requirements.*

HCPC25 - Hells Canyon Preservation Council encourages that a robust assessment of cultural significance is conducted in accordance with Section 106 of the National Historic Preservation Act (NHPA) , 16 U.S.C. § 470(f), and its implementing regulations, 36 C.F.R. §§ 800 *et seq.*

Response - *Cultural resource surveys, mitigations, and consultation with the Confederated Tribes of the Umatilla Indian Reservation and the State Historic Preservation Officer have been completed for cultural resources within the project area. Refer to the Heritage effects section in the EA on pages 258-259.*

HCPC References

Fire Ecology

Agee, J.K. (2003) Monitoring postfire tree mortality in mixed conifer forests of Crater Lake, Oregon, USA. *Natural Areas Journal*, 23, 114–120.

East Face Response – *This article is not relevant to the purpose and need of this project because it is not a post-fire salvage project.*

Baker, W.L. 2009. Fire ecology in Rocky Mountain landscapes. Island Press, Oxford.

East Face Response – *We agree that fire is a natural part of the forces that shape a landscape. The intent of this project is not to remove fire from the landscape but to better be able to manage fire on the landscape. Given the types of potential vegetation groups within this project area and their juxtaposition to private land interface areas, WUIs, and vast acres of inventoried roadless areas, fire managers are seeking to successfully utilize and manage fire on the landscape that are hundreds of acres in size instead of thousands of acres in size in order to not only create the heterogeneity desired but also to continue to provide recreation opportunities, habitat for endangered species, water for agricultural needs, and protect private lands and facilities.*

Baker, W.L., T.T. Veblen, and R.L. Sheriff. 2007. Fire, fuels and restoration of ponderosa pine-Douglas fire forests in the Rocky Mountains, USA. *Journal of Biogeography* 34: 251-269.

East Face Response – *Again, we acknowledge that fire is a natural part of the forces that shape a landscape. The intent of this project is to create and maintain strategically located fuel reduction areas which “compartmentalize” the project area and reduce the potential size of a wildfire, not eliminate it.*

Bekker, M.F., and A.H. Taylor. 2001. Gradient analysis of fire regimes in montane forests of the southern Cascade range. *Plant Ecology* 155: 15-28.

East Face Response – *We acknowledge that species distribution and abundance patterns change with temperature and moisture gradients and thus effect fire severity patterns. The purpose of the proposed treatments in mixed and high severity fire regimes is to create DFPZ's. Modifying fire severity in mixed and high severity fire regimes is not an objective of this project.*

C.A. Frissell. 2004. Postfire management on forested public lands of the western USA. *Conserv*

Beschta, R.L., J.J. Rhodes, J.B. Kauffman, R.E. Gresswell, G.W. Minshall, J.R. Karr, D.A. Perry, E.R. Hauer, and *ation Biology* 18: 957-967.

East Face Response – *This paper is not relevant to the purpose and need of this project as this is not a post fire project.*

Beaty, R.M., and A.H. Taylor. 2001. Spatial and temporal variation of fire regimes in a mixed conifer forest landscape, Southern Cascades, USA. *Journal of Biogeography* 28: 955-966.

East Face Response – *Fire models and fire regime analyses and assumptions used in the fire/fuels analyses completed for the East Face project were appropriate for the landscape, topography, and vegetation types found within this project area.*

Cohen, J. 2008. The Wildland-Urban Interface Fire Problem. A Consequence of the Fire Exclusion Paradigm. *Forest History Today*, 20-26

East Face Response – *The East Face proposed action was designed to meet the Cohesive Wildfire Strategy goals (reference EA page 1). Cohen's work with the "Home Ignition Zone" will be utilized to help create fire-adapted communities within the WUI's.*

Bond, M.L., D.E. Lee, C.M. Bradley, and C.T. Hanson. 2009. Influence of pre-fire tree mortality on fire severity in conifer forests of the San Bernardino Mountains, California. *The Open Forest Science Journal* 2: 41-47.

East Face Response – *This paper is not relevant to the purpose and need of this project. Removal of large standing dead trees is not a primary objective of this project.*

Brown, P.M., and T.W. Swetnam. 1994. A cross-dated fire history from coast redwood near Redwood National Park, California. *Canadian Journal of Forest Research* 24: 21-31.

East Face Response – *This paper is not relevant to the purpose and need of this project as it discusses coastal ecosystems and not the high desert upland vegetation in the East Face area.*

Brown, R. T., J. K. Agee, and J. F. Franklin. 2004. Forest Restoration and Fire: Principles in the Context of Place. *Conservation Biology*. 18: 903-912.

East Face Response – *The proposed treatment locations in this project considered many of the suggestions made in this paper; however, the generalizations made in this paper did not match up with the specific needs within and adjacent to the East Face project area. Fuel reduction locations were based on proximity to WUI areas, private property and strategic locations/DFPZ's. Treatments in mixed and high severity fire regimes are located next to roads in strategically important areas (reference EA pages 74-75).*

Campbell John L, Mark E Harmon, and Stephen R Mitchell. 2011. Can fuel-reduction treatments really increase forest carbon storage in the western US by reducing future fire emissions? *Front Ecol Environ* 2011; doi:10.1890/110057:

East Face Response – *The analysis conducted in this paper focused on more dry vegetation groups which are represented at a very low level within the East Face project area; therefore, the conclusions made in this article are not relevant to this project. All action alternatives manage the forest ecosystem so that it is better able to accommodate climate change and to respond adaptively as environmental changes accrue. The action alternatives encourage gradual adaption to change to a warmer and drier environment by favoring disease and fire resistant trees, reducing stand density, lowering fuel loadings and creating healthy forest.*

Carey, H., and M. Schumann. 2003. Modifying Wildfire Behavior - The Effectiveness of Fuel Treatments. National Community Forestry Center, Working Paper 2, Forest Guild, Santa Fe, NM.

East Face Response – *As recommended in this paper, fuel treatment strategies in the*

East Face action alternatives include thinning (removing ladder fuels and decreasing tree crown density) followed by prescribed fire, piling and burning of fuels, or other mechanical treatments that reduce surface fuel amounts. This approach reduces canopy, ladder and surface fuels, thereby reducing both the intensity and size of potential wildfires (Graham, McCaffery and Jain. 2004. RMRS-GTR-120).

Hanson, C.T., Odion, D.C. 2006. Fire Severity in mechanically thinned versus unthinned forests of the Sierra Nevada, California. In: Proceedings of the 3rd International Fire Ecology and Management Congress, November 13-17, 2006, San Diego, CA.

East Face Response – *Fuel treatment strategies in the action alternatives include thinning (removing ladder fuels and decreasing tree crown density) followed by prescribed fire, piling and burning of fuels, or other mechanical treatments that reduce surface fuel amounts. This approach reduces canopy, ladder and surface fuels, thereby reducing both the intensity of potential wildfires (Graham, McCaffery and Jain. 2004. RMRS-GTR-120).*

Hutto, R. L. 2008. The Ecological Importance of Severe Wildfires: Some Like it Hot. Ecological Applications, 18(8); 1827-1834.

East Face Response – *The importance of high severity fire regime areas for the creation of habitat for black-backed woodpeckers is acknowledged under the wildlife section in the EA. The intent of this project is not to eliminate fire from this landscape but to manage the scale it may create this habitat on the landscape in order to provide for multiple uses and species.*

Loehman, R., Reinhardt, E., and Riley K., “Wildland fire emissions, carbon, and climate: Seeing the forest and the trees – A cross-scale assessment of wildfire and carbon dynamics in fire-prone, forested ecosystems”. Forest Ecology and Management 317 (2014) 9–19.

East Face Response – *We acknowledge that Carbon-fire interactions are spatially and temporally dynamic and complex and are therefore difficult to quantify and predict. We can assume that future ecosystems will be different from today's, but we cannot be specific about the patterns and processes that may emerge in the coming decades and centuries (Millar et al., 2007).*

All action alternatives manage the forest ecosystem (EA pages 97 and 98) so that it is better able to accommodate climate change and to respond adaptively as environmental changes accrue. The action alternatives encourage gradual adaption to change to a warmer and drier environment by favoring disease and fire resistant trees, reducing stand density, and lowering fuel loadings. This would reduce the potential for catastrophic conversion due to climate change driven disturbance factors that are forecasted (see Forest Vegetation section).

Adaptive strategies included within the treatment design:

- 1. Resistance options – manage forest ecosystems and resources so that they are better able to resist the influence of climate change or to stall undesired effects of change.*
- 2. Promote resilience to change – resilient forests are those that not only accommodate gradual changes related to climate but tend to return toward a prior condition after disturbance either naturally or with management assistance. Promoting resilience is the most commonly suggested adaptive option discussed in*

a climate-change context (Dale et al. 2001, Price and Neville 2003, Spittlehouse and Stewart 2003). Forest management techniques such as prescribed burning or thinning dense forest, can make forest more resilient to wildfire and decrease fire emissions.

3. Enable forest to respond to change – This group of adaptation options intentionally accommodates change rather than resist it, with a goal of enabling or facilitating forest ecosystems to respond adaptively as environmental changes occur (Milar, 2007).

Lutz, J.A., et al. 2009. Climate, lightning ignitions, and fire severity in Yosemite National Park, California, USA. *International Journal of Wildland Fire* 18: 765-774.

East Face Response – *We acknowledge that lightning ignitions and fire severity will change as the climate warms. The proposed treatments are designed to create DFPZ's which would increase options for fire managers to suppress and manage future wildfires.*

Miller J. D. & A. E. Thode. 2007. Quantifying burn severity in a heterogeneous landscape with a relative version of the delta Normalized burn ratio (dNBR). *Remote Sensing of Environment* 109: 66-80.

East Face Response – *This article is not relevant to the purpose and need of this project. Modifying fire severity in the high and mixed severity fire regimes is not a goal of this project. Fuels treatments were designed to modify existing fuels beds and reduce potential fire behavior.*

Miller, J.D., H.D. Safford, M. Crimmins, and A.E. Thode. 2009. Quantitative evidence for increasing forest fire severity in the Sierra Nevada and southern Cascade Mountains, California and Nevada, USA. *Ecosystems* 12: 16-32.

East Face Response – *The fire environment includes available fuels (vegetation), existing topography, and weather. These elements together define fire behavior. Of these, only fuels can be altered by management actions. Many elements of fuels work together to influence fire behavior including: vertical and horizontal distribution and continuity, moisture and chemical content, compaction, size and shape of fuels, and fuel loading. These elements of the fire environment can be modified to reduce potential fire behavior.*

This article concludes that the "climate–fire relationship and other evidence suggests that forest fuels are no longer limiting fire occurrence and behavior". The behavior modeling conducted in analysis shows that surface and crown fuels can be manipulated to reduce fire intensity. (Reference EA pages 80 -82 and the Fire behavior Appendix).

Mitchell, Harmon, O'Connell. 2009. Forest fuel reduction alters fire severity and long-term carbon storage in three Pacific Northwest ecosystems. *Ecological Applications*. 19(3), 2009, pp. 643–655

East Face Response – *We acknowledge the need for balancing carbon storage with the demand for reduced wildfire intensity within the project area. The proposed fuels reduction treatments are applied strategically throughout the landscape rather than indiscriminately. There are large portions of the project that have no treatments proposed, leaving the existing carbon stocks in the forest.*

Noss, R.F., J.F. Franklin, W.L. Baker, T. Schoennagel, P.B. Moyle. 2006. Managing fire-prone forests in the western United States. *Frontiers in Ecology and Environment* 4: 481-487.

East Face Response – *We acknowledge that fire exclusion led to major deviations from historical variability in many dry, low-elevation forests, but not in other forests, such as those characterized by high severity fires recurring at intervals longer than the period of active fire exclusion. The proposed treatments in mixed and high severity fire regimes were not designed to accomplish restoration needs. The intent of this project is not to remove fire from the landscape but to better be able to manage fire on the landscape. Given the types of potential vegetation groups within this project area and their juxtaposition to private land interface areas, WUIs, and vast acres of inventoried roadless areas, fire managers are seeking to successfully utilize and manage fire on the landscape that are hundreds of acres in size instead of thousands of acres in size in order to not only create the heterogeneity desired but also to continue to provide recreation opportunities, habitat for endangered species, water for agricultural needs, and protect private lands and facilities.*

Raymond, C.L., and D.L. Peterson. 2005. Fuel treatments alter the effects of wildfire in a mixed-evergreen forest, Oregon, USA. *Canadian Journal of Forest Research*. 35: 2981-2995.

East Face Response – *Fuel treatment strategies in the action alternatives include thinning (removing ladder fuels and decreasing tree crown density) followed by prescribed fire, piling and burning of fuels, or other mechanical treatments that reduce surface fuel amounts. This approach reduces canopy, ladder and surface fuels, thereby reducing both the intensity of potential wildfires (Graham, McCaffery and Jain. 2004. RMRS-GTR-120).*

Rhodes, J. J., W. L. Baker. 2008. Fire Probability, Fuel Treatment Effectiveness and Ecological Tradeoffs in Western U.S. Public Forests. *The Open Forest Science Journal*. 1: 1-7.

East Face Response – *Fire occurrence rates and treatment effectiveness durations were considered within this analysis (Reference analysis file).*

Rhodes, J.J. 2007. The watershed impacts of Forest Treatments To Reduce Fuels and Modify Fire Behavior. Commissioned by Pacific River Council, 94 pp.

East Face Response – *The points made in this paper have been considered and are reflected in the analyses completed by all resources for the East Face project area.*

Wales, B. C., Suring, L. H., and M. A. Hemstrom. 2007. Modeling potential outcomes of fire and fuel management scenarios on the structure of forested habitats in northeast Oregon, USA. *Landscape and Urban Planning*. 80:223-236.

East Face Response – *The principles and findings of this research have been incorporated in the treatment design.*

Westerling, A.L., H.D. Hidalgo, D.R. Cayan, and T.W. Swetnam. 2006. Warming and earlier spring increase Western U.S. forest wildfire activity. *Science* 313:940-943.

East Face Response – *The increased duration of fire season in the mixed and high fire severity regimes reinforces the need for strategically located fuels reduction areas. Longer*

fire season durations will draw down fire suppression resources at critical times. The proposed treatments are proactive approach to assist fire managers by the creation and maintenance of DFPZ's to manage wildfires.

Whitlock, C., J. Marlon, C. Briles, A. Brunelle, C. Long, and P. Bartlein. 2008. Long-term relations among fire, fuel, and climate in the north-western US based on lake-sediment studies. *International Journal of Wildland Fire* 17: 72-83.

East Face Response – *Fire history was considered back into the early 1900's for this project. Fire regimes are not a consideration in this project. This project is purely focused on managing potential fire behavior in strategic locations to provide more options for fire managers to manage wildfire in the East Face project area.*

Mixed Conifer Forest Ecology & Forest Health

Cochran, P. H., J. M. Geist, D. L. Clemens, R. R. Clausnitzer, and D. C. Powell. 1994. Suggested Stocking Levels for Forest Stands in Northeastern Oregon and Southeastern Washington. PNW-RN-513.

East Face Response – *This publication is used to determine stocking levels for all stands in East Face. During the recon/diagnosis phase this publications was used to prioritize stands. Marking guides for East Face units use this publication to determine target basal areas.*

Crist, M.R., T.H. DeLuca, B. Wilmer, and G.H. Aplet. 2009. Restoration of Low- Elevation Dry Forests of the Northern Rocky Mountains: A Holistic Approach. Washington, D.C.: The Wilderness Society.

East Face Response – *This article was used to help determine during diagnosis phase if treatments would help achieve the purpose and need of the East Face project. Some major principles in this paper where:*

- 1. In Northern Rockies restoring a fire resilient stand structure requires thinning and prescribed fire.*
- 2. Stands of ponderosa pine, Douglas-fir, western larch through past management have altered stand structure (particularly by increasing stand density); have a reduced ecological integrity, and an increase to fire susceptibility.*
- 3. Effective restoration requires management to be conducted in the context of the historical range of conditions and intended future use.*
- 4. In recent years combination of drought conditions and hot summers has probably stressed trees and could make ponderosa pine, Douglas-fir, and western larch more susceptible to insects and pathogens.*

Cyr, D., S. Gauthier, Y. Bergeron, and C. Carcaillet. 2009. Forest Management is driving the eastern North American boreal forest outside its natural range of variability. *Frontiers in Ecology and the Environment*. 7(10): 519-524.

East Face Response – *Article discussed range of variability through mean fire interval (MFI) for ages and structures using sedimentary charcoal records for Eastern Canada.*

This range of variability, MFI is not applicable to East Face. However, there is a claim that management is causing a shift in age-class distribution towards younger stands with a decrease in old growth stands. In East Face project many of our treatments are intermediate silvicultural systems which will not create younger stands but begin to provide a foundation for more old growth structure.

This Article also discussed that 40% of the landscape be subject to one of three strategies: longer rotations, silvicultural treatments such as partial cutting, or conservation measures. In East Face we are using those three strategies on much of the landscape.

DellaSalla, Dominick 2013. Why Biodiversity is Important to Solving Climate Chaos: Top 10 Reasons. Island Press Field Notes Blog. Sept 13, 2013.

East Face Response – *Treatments in East Face are moving towards a more resilient and resistant landscape which should help attain some to the ten reasons why biodiversity is important to solving climate chaos.*

Reducing stand density and opening the canopy can increase overall species diversity (Keeling et al 2006).

DellaSala, D. A., A. Martin, R. Spivak, T. Schulke, B. Bird, M. Criley, C. van Daalen, J. Kreilick, R. Brown, and G. Aplet. 2003. A citizen's call for ecological forest restoration: Forest restoration principles and criteria. *Ecological Restoration*. 21: 14-23.

East Face Response – *Restoration principles must address ecological, economic, and social needs. The East Face project is a step toward meeting the restoration principles in this article. The environmental analysis addresses many of the ecological, economic, and social needs.*

Franklin, J.F., K.N. Johnson, D.J. Churchill, K. Hagmann, D. Johnson and J. Johnson. 2013. Restoration of Dry Forests in Eastern Oregon: A Field Guide. The Nature Conservancy, Portland, OR. 203 p.

Millar, C. I., N. L. Stephenson, and S. L. Stephens. 2007. Climate Change and Forests of the Future: Managing in the Face of Uncertainty. *Ecological Applications*. 17:2145-2151.

Stine, Peter; Hessburg, Paul; Spies, Thomas; Kramer, Marc; Fettig, Christopher J.; Hansen, Andrew; Lehmkuhl, John; O'Hara, Kevin; Polivka, Karl; Singleton, Peter; Charnley, Susan; Merschel, Andrew; White, Rachel. 2014. The ecology and management of moist mixed-conifer forests in eastern Oregon and Washington: a synthesis of the relevant biophysical science and implications for future land management. Gen. Tech. Rep. PNW-GTR-897. Portland, OR: U.S. Department of Agriculture, Forest Service, Pacific Northwest Research Station. 254 p.

East Face Response – *These articles (Franklin, Millar, Stine) were used as a basis for developing treatments in East Face, they helped to provide practical, science based framework for activities.*

The articles discuss basic principles, examples of on-the-ground applications, silvicultural

prescriptions for different forest types and different strategies to deal with environmental changes from ongoing climate changes. Many of the concepts in these articles were considered during diagnosis and proposed treatment phases in East Face.

Geils, Brian W.; Cibrián Tovar, Jose; Moody, Benjamin, tech. coords. 2002. *Mistletoes of North American Conifers*. Gen. Tech. Rep. RMRS–GTR–98. Ogden, UT: U.S. Department of Agriculture, Forest Service, Rocky Mountain Research Station. 123 p.
http://extension.usu.edu/forestry/Reading/Assets/PDFDocs/RMRS_GTR_098.pdf

East Face Response – *This article discussed mistletoes and management strategies. Mistletoes increase susceptibility to other disease agents or insects, reduce longevity, reduce growth rates and have significant ecological and economic effects. The spread, intensification, damage, and impacts of dwarf mistletoe can be reduced, maintained or enhanced by silvicultural treatments.*

Johnson, D. W.; Yarger, L. C.; Minnemeyer, C. D.; Pace, V. E. 1976. *Dwarf Mistletoe As A Predisposing Factor For Mountain Pine Beetle Attack Of Ponderosa Pine In The Colorado Front Range*. U.S. For. Serv., Rocky Mountain Region, Forest Insect And Disease Manage. Tech. Rept. R2-4, 7 P.

East Face Response – *Cannot locate this article*

Keeling, E.G., A. Sala, T.H. DeLuca. 2006. Effects of fire exclusion on forest structure and composition in unlogged ponderosa pine/Douglas-fir forests. *Forest Ecology and Management*, 237, pp. 418-428.

East Face Response – *This paper lists six characteristics of forest stands where fire is excluded and states that fire exclusion may not be the driver for increase in shade tolerant densities and forest structure. In many stands, treatments in East Face are to reduce shade tolerant species for the purpose realigning cover types towards range of variability, as well as re-introducing fire effects.*

Lindenmayer, D.B., M. L. Hunter, P. J. Burton, and P. Gibbons. 2009. Effects of logging on fire regimes in moist forests. *Conservation Letters*. 2: 271-277.

East Face Response – *The purpose and need for the East Face project is focused on managing fire behavior not affecting fire regimes within the project area. We recognize that the fire regimes within this project area are of mixed severity. It is not the intent of this project to keep fire out of the ecosystem here, but to be able to better manage it in the event of a wildfire.*

Maloney, P.E.; Rizzo, D.M. 2002. Dwarf mistletoe-host interactions in mixed-conifer forest in the Sierra Nevada. *Phytopathology*. 92(6):597-602.

East Face Response – *This paper deals with white fir and Jeffery pine. In East Face there is no Jeffery pine and there are no treatments proposed to treat mistletoe in white fir.*

Pollock, Michael M., Ph.D. Kieran Suckling. 1995. *An Ecologically Integrated Approach to Management of Dwarf Mistletoe (Arceuthobium) in Southwestern Forests*. Southwest Forest Alliance May 5, 1995. <http://www.sw-center.org/swcbd/Programs/science/mistltoe.html>

East Face Response – *This paper deals with the importance of dwarf mistletoes to the ecology of coniferous forests. In East Face that importance is incorporated into the marking guide. It is acceptable to leave some large size mistletoes infected trees for food, nesting and future snags, preferably in clusters. The intent of mistletoe treatments is to reduce the spread and intensification across the landscape and to provide for stand conditions that historically occurred that allowed mistletoes to provide their function in the ecosystem.*

Waring, R. H., T. Savage, K. Cromack, Jr., and C. Rose. 1992. Thinning and nitrogen fertilization in a grand fir stand infested with western spruce budworm. Part IV. An ecosystem management perspective. *Forest Science* 38:275-286.

East Face Response – *This paper is not applicable to East Face. There are no fertilization treatments planned.*

Landscape Connectivity

Erman, D.C., Erman, N.A., Costick, L., and Beckwitt, S. 1996. Appendix 3. Management and land use buffers. Sierra Nevada Ecosystem Project Final Report to Congress, Vol. III, pp. 270-273.

East Face Response – *This paper pertains to riparian buffers which have been incorporated into the design of connective corridors where possible and landscape connectivity areas where appropriate in the East Face project.*

Roadless Areas

Loomis, J., and R. Richardson. 2000. Economic Values of Protecting Roadless Areas in the United States. An Analysis Prepared for the Wilderness Society and the Heritage Forest Campaign. Washington, D.C.: The Wilderness Society.

East Face Response – *This paper focuses defining economic values related to recreation and ecological services for inventoried roadless area. No inventoried roadless areas are located within the East Face project area; therefore, this paper would have no relevance to the activities proposed in this project.*

Old Growth

Luyssaert, S., E. Detlef Schulz, A. Borner, A. Kohl, D. Hessenmoller, B.E. Law, et al. 2008. Old-growth forests as global carbon sinks. *Nature* 455:213-215.

Zhou, G., Liu, S., Li, Z., Zhang, D., Tang, X., Zhou, C., Yan, J., & J. Mo. 2006. Old-Growth Forests Can Accumulate Carbon in Soils. *Science*, 314, pg 1417.

East Face Response – *Regarding the two papers above, the majority of old growth within the project area will not be disturbed and there will be no net loss of LOS. The actions proposed in this project are consistent with recommendations from the 2007 IPCC report because it focuses on silvicultural prescriptions which will improve stand health and vigor contributing to tree growth, increased biomass production and old growth. (Refer to the EA section of Climate Change, page 258).*

Covington, W.W. and M.M. Moore, 1992. Post-settlement Changes in Natural Fire Regimes: Implications for Restoration of Old Growth Ponderosa Pine Forests. In Old Growth forests in the Southwest and Rocky Mountain regions: Proceedings of a workshop, p. 81-99. USDA For Serv. Gen Tech. Rep. RM-213. 201p.

East Face Response – *We were unable to access this paper online.*

Habeck, J.R. 1990. Old-growth ponderosa pine-western larch forests in western Montana: ecology and management. Northwest Environmental Journal 6:271-292.

East Face Response – *We were unable to access this paper online.*

LIVESTOCK AND FOREST HEALTH LITERATURE

East Face Overall Response – *This list of literature was all taken from the Literature Cited section of one document: a Center for Biological Diversity paper called “Livestock Grazing, Fire Regimes, and Tree Densities”. This paper indicates that livestock grazing has contributed to increased tree densities and conifer invasion into western grasslands. As can be seen below, many of these papers which are meant to support the findings in this article are based on high intensity grazing which does not occur within the East Face project area and is not the reason for the current high tree densities within the East Face project area. Most of the overstocking within the area is the result of historic large fires creating acres of dog hair lodgepole stands across the project area. This project is only focused on fire behavior and not focused on fire regimes; therefore, for these two reasons this article is not relevant to the existing condition nor the proposed activities within the East Face project area.*

Allen, B.H., and J.W. Bartolome. 1989. Cattle grazing effects on understory cover and tree growth in mixed conifer clearcuts. Northwest Science 63:214-220.

East Face Response – *This paper focuses on clearcuts that have been planted and advocates that despite some seedling loss to browsing and trampling, which is expected, cattle benefit tree plantations by reducing competition of woody and herbaceous species. East Face does not have any clearcuts and proposes a limited amount of planting.*

Archer, S. and F.E. Smeins. 1991. Ecosystem-level processes. Pages 109-139 in R.K. Heitschmidt and J.W. Stuth, editors. Grazing management: an ecological perspective. Timber Press, Portland, Oregon.

East Face Response – *This paper does not pertain to the East Face project as it focuses on lands primarily being managed for livestock grazing. The purpose and need for the East Face project is related primarily to managing fire behavior within the project area.*

Armour, C.L., D.A. Duff, and W. Elmore. 1991. The effects of livestock grazing on riparian and stream ecosystems. Fisheries 16(1):7-11.

East Face Response – *This paper does not pertain to the East Face project as it focuses on lands primarily being managed for livestock grazing. The East Face project area is not primarily managed for livestock grazing. The purpose and need for the East Face project is related primarily to managing fire behavior within the project area.*

Arnold, Joseph F., 1950. Changes in Ponderosa Pine Bunch grass Ranges in Northern Arizona Resulting from Pine Regeneration and Grazing. J. Forestry 48: 118- 126.

East Face Response – *This paper focused on areas of high grazing intensity. The East Face project has relatively light stocking rates.*

Bahre, Conrad Joseph, 1991. A Legacy of Change - Historic Human Impact on Vegetation of the Arizona Borderlands. Tucson, University of Arizona Press 231p.

East Face Response – *This paper focuses on the effect of Anglo settlement on natural vegetation of the arid American southwest which is not reflective of the East Face project.*

Bahre, Conrad J., 1985. Wildfire in Southeastern Arizona Between 1859 and 1890. Desert Plants 7(4):190-194

East Face Response – *We were unable to access this paper online. It only appears as a citation within other articles.*

Baumgartner, D. and J.E. Lotan, eds. 1987. Proceedings of a symposium: ponderosa pine - the species and its management. Spokane, Washington.

East Face Response – *We were unable to access this paper online.*

Belsky, J and D. Blumenthal. 1995. Ecological Assessment of Livestock Grazing in Forests of the Western Interior United States. Paper prepared for the Interior Columbia Basin Ecosystem Management Project (US Forest Service). Submitted 14 April 1995. Submitted to Conservation Biology.

East Face Response – *This paper focused on areas of high grazing intensity. The East Face project has relatively light stocking rates.*

Belsky J, Matzke A, Uselman S. 1999. Survey of livestock influences on stream and riparian ecosystems in the western United States. J. Soil Water Conserv. 54:419–31

East Face Response – *This paper does not pertain to the East Face project as it focuses on lands primarily being managed for livestock grazing. The purpose and need for the East Face project is related primarily to managing fire behavior within the project area.*

Beschta, Robert L., et al. "Adapting to climate change on Western public lands: Addressing the ecological effects of domestic, wild, and feral ungulates." *Environmental management* 51.2 (2013): 474-491.

East Face Response – *This paper does not pertain to the East Face project as it focuses on lands primarily being managed for livestock grazing. The purpose and need for the East Face project is related primarily to managing fire behavior within the project area.*

Blackburn, W.H. 1984. Impacts of grazing intensity and specialized grazing systems on watershed characteristics and responses. Pages 927-983 in Developing strategies for rangeland management. Westview Press, Boulder, Colorado.

East Face Response – *This paper does not pertain to the East Face project as it focuses on lands primarily being managed for livestock grazing. The purpose and need for the*

East Face project is related primarily to managing fire behavior within the project area.

Blackburn, Wilbert H. and Paul T. Tueller, 1970. Pinyon and Juniper Invasion in Black Sagebrush Communities in East-Central Nevada. Ecology 51(5) pp. 841-848.

East Face Response – *This paper does not pertain to the East Face project as it focuses on lands primarily being managed for livestock grazing in plant communities unrelated to the East Face project. The purpose and need for the East Face project is related primarily to managing fire behavior within the project area.*

Brawn, J.D. and R.P. Balda. 1988. The influence of silvicultural activity on ponderosa pine forest bird communities in the Southwestern United States. IN Bird Conservation, Vol. 3, G.A. Jackson, ed. International Council for Bird Protection and the University of Wisconsin Press.

East Face Response – *This paper addresses the relationship between forest stand quality and structure and bird diversity. This project addresses these interfaces through retention of snags, wildlife corridors and RHCA buffers. See wildlife section.*

Campbell, R.R. 1954. Fire in relation to forest grazing. Unasylva8:154-158.

East Face Response – *This paper supports the use of prescribed fire as a tool to improve forage conditions, prevent destructive wildfire, aid silvicultural and timber management, and improve other natural resources. It also indicates that grazing aides in protecting forest range against destructive wildfires. Much of this meets the East Face purpose and need.*

Chandler, R.F. Jr. 1940. The influence of grazing upon certain soil and climatic conditions in farm woodlands. Journal of the American Society of Agronomy 32:216-230

East Face Response – *This paper focuses on farm woodlands which does not relate to the conditions and on-going activities in the East Face project area.*

Clary, W.P., 1975. Range Management and its Ecological Basis in the Ponderosa Pine Type of Arizona: The Status of Our Knowledge. USDA Forest Service Research Paper RM-158 35p. Rocky Mt. For and Range Exp. Stn., Fort Collins, Colo. 80521

East Face Response – *We were unable to access this paper online. It only appears as a citation within other articles.*

Cooper, C.F., 1960. Changes in Vegetation, Structure, and Growth of Southwestern Pine Forests since White Settlement. Ecol. Monog. 30(2): pp. 129-164

East Face Response – *We were unable to access this paper online. It only appears as a citation within other articles.*

Cottam, W.P. 1976. The impact of man on the flora of the Bonneville Basin. Research Paper Number 76-1, Department of Geography, University of Utah, Salt Lake City, Utah, USA.

East Face Response – *We were unable to access this paper online. It only appears as a citation within other articles.*

Coville, Frederick V. (1898) *Forest growth and sheep grazing in the Cascade Mountains of Oregon Washington*, D.C.: Dept. of Agriculture, Forestry Division

East Face Response – *This paper describes the conditions observed during turn of the century sheep grazing when stocking numbers were much higher. The East Face project has relatively light stocking rates.*

Covington, W. W. and M. Moore, 1994. Southwestern Ponderosa Forest Structure. *Journal of Forestry*, January 1994. p. 39-47

East Face Response – *This paper focuses on the effect of Euro-American settlement on natural vegetation of the arid American southwest which is not reflective of the East Face project*

Covington, and R.H. Hamre, technical coordinators. General Technical Report RM-85. U.S. Forest Service Forest and Range Experimental Station, Fort Collins, Colorado.

East Face Response – *We were unable to access this paper online. It only appears as a citation within other articles.*

Covington, W.W. and L.F. DeBano. 1988. Effects of fire on pinyon-juniper soil. IN *Management of Southwestern Natural Resources*, USDA Forest Service.

East Face Response – *This paper focused on the effects of historic high intensity grazing. The East Face project has relatively light stocking rates*

Covington, W.W. and S.S. Sackett. 1988. Fire effects on ponderosa pine soils and their management implications. in *Management of Southwestern Natural Resources*, USDA Forest Service.

East Face Response – *This paper focused on the effects of historic high intensity grazing. The East Face project has relatively light stocking rates*

Currie, P.O. 1987. Grazing in ponderosa pine forests. Pages 193-200 in D. Baumgartner, and J.E. Lotan, eds. *Proceedings of a symposium: ponderosa pine - the species and its management*. Spokane, Washington.

East Face Response – *We were unable to access this paper online.*

Currie, P.O. and H.L. Gary. 1978. Grazing and logging effects on soil surface changes in central Colorado's ponderosa pine type. *Journal of Soil and Water Conservation* 4:176-178.

East Face Response – *We were unable to access this paper online. It only appears as a citation within other articles.*

Duffy-Deno, Kevin T. 1997. "The effect of state parks on the county economies of the West." *Journal of Leisure Research* 29 (2): 201-224.

East Face Response – *This paper is not relevant to the purpose and need of this project as the focus of this paper is on state parks, not forest management.*

Duffy-Deno, Kevin T. 1998. "The effect of federal wilderness on county growth in the intermountain western United States." *Journal of Regional Science* 38(1): 109-136.

East Face Response – *This paper is not relevant to the purpose and need of this project as the focus of this paper the potential of wilderness adversely affecting local resource based employment, not forest management. There is no wilderness proposed in this project.*

Eissenstat, D.M., J.E. Mitchell, and W.W. Pope. 1982. Trampling damage by cattle on northern Idaho forest plantations. *Journal of Range Management* 35(6):715-716.

East Face Response – *This paper focuses on clearcuts that have been planted and identified damage to seedling trees attributed to heavy livestock grazing which does not occur within the project area. The East Face project does not have any clearcuts and proposes a limited amount of planting.*

Ellison, Lincoln, 1960. Influence of Grazing on Plant Succession of Rangelands. *The Botanical Review* V26 (1) Jan-Mar 1960 p. 1-78

East Face Response – *This paper focuses on the effects of grazing on grass and rangelands which are not prevalent within the East Face project area and many of the ones discussed do not occur within eastern Oregon.*

Evanko, A.B., and R.A. Peterson. 1955. Comparisons of protected and grazed mountain rangelands in southwestern Montana. *Ecology* 36:71-83. Evans, R.A. 1988. Management of Pinyon-Juniper Woodlands. Gen. Tech. Rep. INT-249. USDA-FS.

East Face Response – *This paper focused on the effects of historic high intensity grazing. The East Face project has relatively light stocking rates and doesn't relate to the purpose and need for this project.*

Faulk, O.B. 1970. *Arizona: A Short History*. University of Oklahoma Press, Norman, OK.

East Face Response – *We were unable to access this paper online. It only appears as a citation within other articles.*

Filip, G.M. 1994. Forest Health decline in central Oregon: a 13-year case study. *Northwest Science* 68(4): 233-240.

East Face Response – *This paper supports stand density management at the landscape level to reduce the susceptibility to insects and diseases. The East Face project will accomplish many of the recommendations from this paper.*

Fitzgerald, R.D., R.J. Hudson, & A.W. Bailey. 1986. Grazing preferences of cattle in regenerating aspen forest. *J. of Range Manage.* 39(1):13-18.

East Face Response – *This paper does not pertain to the East Face project as it focuses on lands primarily being managed for livestock grazing. The purpose and need for the East Face project is related primarily to managing fire behavior within the project area.*

Fitzgerald, R.D. and A.W. Bailey. 1984. Control of aspen re-growth by grazing with cattle. *J. of Range Manage.* 37(2):156-158.

East Face Response – *This paper does not pertain to the East Face project as it focuses on lands primarily being managed for livestock grazing. This study identified last season heavy livestock grazing suppressing aspen regrowth. Livestock grazing within the East Face project is relatively light. The purpose and need for the East Face project is related primarily to managing fire behavior within the project area.*

Fleischner, Thomas L. 1994. Ecological Costs of Livestock Grazing in Western North America. *Conservation Biology* 8(3): 629-644.

East Face Response – *This paper does not pertain to the East Face project as it focuses on lands primarily being managed for livestock grazing. The purpose and need for the East Face project is related primarily to managing fire behavior within the project area.*

Galbraith, W.A. and E.W. Anderson. 1991. Grazing history of the Northwest. *Rangelands* 13(5):213-218.

East Face Response – *This paper does not pertain to the East Face project as it focuses on lands primarily being managed for livestock grazing. The purpose and need for the East Face project is related primarily to managing fire behavior within the project area.*

Gillen, R.L., W.C. Krueger, and R.F. Miller. 1984. Cattle distribution on mountain rangeland on northeastern Oregon. *Journal of Range Management* 37(6):549-553.

East Face Response – *This paper does not pertain to the East Face project as it focuses on lands primarily being managed for livestock grazing. The purpose and need for the East Face project is related primarily to managing fire behavior within the project area.*

Graham, R. T. and J.L. Kingery. 1990. Seedling damage and mortality of conifer plantations on transitory ranges in northern and central Idaho. Pages 209-213 in R.L. Davis and R.E. Marsh, eds., *Proceedings of the 14th Vertebrate Pest Conference*. University of California, Davis, California.

East Face Response – *This paper focuses on mortality in plantations and suggests that plantation sizes should be small. The East Face project proposes a very limited number of acres of planting and the unit sizes are small (generally 2-5 acres in size) and many of them will be pockets within improvement cut units which will have higher densities and minimize cattle access. This complies with the recommendations found in this paper.*

Graham, Russell T, James Kingery and Leonard A. Volland. 1992. Livestock and Forest Management Interactions. in *Silvicultural Approaches to Animal Damage Management in Pacific Northwest Forests*. GTR PNW-287. USDA Forest Service, Pacific Northwest Research Station, Portland, OR.

East Face Response – *We were unable to access this paper online. It only appears as a citation within other articles.*

Gruell, G.E. 1985. Fire on the early western landscape: an annotated record of wildland fires 1776-1900. *Northwest Science* 59:97-104.

East Face Response – *This paper studies fire history on forested landscapes and concludes that it played a major role in shaping western landscapes over time. The East Face project recognizes this as well and has incorporated that it (along with more recent*

science) into the design and goals of the East Face project.

Hall, F.C. 1976. Fire and vegetation in the Blue Mountains -implications for land managers. Proceedings of the Tall Timbers Fire Ecology Conference 15:155-170.

East Face Response – *We were unable to access this paper online. It only appears as a citation within other articles.*

Hall, F.C. 1994. Historical and present conditions of the Blue Mountain forests. Blue Mountain Natural Resource News. U.S. Forest Service, Pacific Northwest Research Station, Portland, Oregon. March: 1-2.

East Face Response – *We were unable to access this paper online. It only appears as a citation within other articles.*

Halloin, L. 1991. Plantation grazing - a feasibility review. Washington State Department of Natural Resources, Pullman, Washington.

East Face Response – *We were unable to access this paper online. It only appears as a citation within other articles.*

Hanson, C.T., Odion, D.C. 2006. Fire Severity in mechanically thinned versus unthinned forests of the Sierra Nevada, California. In: Proceedings of the 3rd International Fire Ecology and Management Congress, November 13-17, 2006, San Diego, CA.

East Face Response – *We were unable to access this paper online. It only appears as a citation within other articles.*

Harrington, G.N. 1991. Effects of soil moisture on shrub seedling survival in a semi-arid grassland. Ecology 72(3):1138-1149.

East Face Response – *This paper focused on the effects of historic high intensity grazing. The East Face project has relatively light stocking rates*

Harrington, M.G. and S.S. Sackett. 1988. Using fire as a management tool in Southwestern ponderosa pine. IN Management of Southwestern Natural Resources, USDA Forest Service.

East Face Response – *This paper focused on the effects of historic high intensity grazing. The East Face project has relatively light stocking rates*

Harris, D.R. 1966. Recent plant invasions in the arid and semi-arid Southwest of the United States. Annals of the Association of American Geographers 56:408-422. Harris, G.A. 1991. Grazing lands of Washington State. Rangelands 13(5):222-227. Harris G.A. and M. Chaney. 1984. Washington State grazing land assessment. Washington State Cooperative Extension. Pullman.

East Face Response – *This paper focuses on invasive species native to the southwestern United States which are not found within the East Face project area and therefore, not relevant to this analysis.*

Hastings, J.R. and R.M. Turner. 1965. The Changing Mile. University of Arizona Press, Tucson.

East Face Response – *We were unable to access this paper online. It only appears as a citation within other articles.*

Heitschmidt, R.K. and J.W. Stuth, eds. 1991. Grazing management: an ecological perspective. Timber Press, Portland, Oregon.

East Face Response – *This manual is meant to be used for projects focusing primarily on livestock management and was not relevant to the purpose and need of the East Face project.*

Hill, R.R. 1917. Effects of grazing upon western yellow pine production in the National Forests of Arizona and New Mexico. USDA Bulletin 580.

East Face Response – *We were unable to access this paper online. It only appears as a citation within other articles*

Holmes, T.P. 1988. "The offsite impact of soil erosion on the water treatment industry." *Land Economics* 64(4): 356-366.

East Face Response – *This paper is not relevant to the purpose and need of this project as the focus of this paper is on effects from croplands and farms, not forest management.*

Humphrey, R.R. 1956. History of Vegetation Changes in Arizona. *Arizona Cattlelog* 11:32- 35.

East Face Response – *We were unable to access this paper online. It only appears as a citation within other articles*

Humphrey, R.R. 1958. The desert grassland: A history of vegetational change and an analysis of causes. *Botanical Review* 24:193-252.

East Face Response – *This paper focuses on the effect of Euro-American settlement on natural vegetation of the arid American southwest which is not reflective of the East Face project*

Humphrey, R.R. 1987. 90 Years and 535 Miles: Vegetation Changes Along the Mexican Border. Albuquerque. University of New Mexico Press.

East Face Response – *This paper focuses on the effect of Euro-American settlement on natural vegetation of the arid American southwest which is not reflective of the East Face project.*

Irwin, L.L., J.G. Cook, R.A. Riggs, and J.M. Skovlin. 1994. Effects of long term grazing by big game and livestock in the Blue Mountains forest ecosystems. General Technical Report PNW-325. U.S. Forest Service, Pacific Northwest Research Station, Portland, Oregon.

East Face Response – *The legacy effects of past management which have created the existing condition are described in the purpose and need for the East Face project. This project addresses treatments related primarily to managing fire behavior within the project area.*

Jameson, D.A. 1968. Species interactions of growth inhibitors in native plants of northern Arizona. Forest Service Research Note RM-113, Rocky Mountain Forest and Range Experiment Station, Fort Collins, CO, USA

East Face Response – *Only the front and back pages of this paper were available online.*

Johnson, W.M. 1956. The effect of grazing intensity on plant composition, vigor, and growth of pine-bunchgrass ranges in central Colorado. Ecology 37(4):790-798.

East Face Response – *This paper does not pertain to the East Face project as it focuses on lands primarily being managed for livestock grazing. The purpose and need for the East Face project is related primarily to managing fire behavior within the project area.*

Johnson, C.G. Jr., R.R. Clausnitzer, P.J. Mehringer, and C.D.Oliver. 1994. Biotic and abiotic processes of eastside ecosystems: the effects of management on plant and community ecology, and on stand and landscape vegetation dynamics. General Technical Report PNW-GTR 322. U.S. Forest Service, Pacific Northwest Research Station, Portland, OR.

East Face Response – *The legacy effects of past management which have created the existing condition are described in the purpose and need for the East Face project. This project addresses treatments related primarily to managing fire behavior within the project area.*

Karl, M.G. and P.S. Doescher. 1993. Regulating competition on conifer plantations with prescribed cattle grazing. Forest Service 39:405-418

East Face Response – *This paper focused on the effects of high intensity grazing on tree seedling establishment. The East Face project has relatively light stocking rates.*

Kauffman, J.B., W.C. Krueger, and M. Vavra. 1983. Effects of late season cattle grazing on riparian ecosystems and streamside management implications...a review. Journal of Range Management 37(5): 430-438.

East Face Response – *This paper does not pertain to the East Face project as it focuses on lands primarily being managed for livestock grazing. The purpose and need for the East Face project is related primarily to managing fire behavior within the project area.*

Koehler, D.A., S.D. Thomas, H.D. Russell, and J.A. Mastel. 1989. Multi-resource management of ponderosa pine forests. General Technical Report RM-185. U.S. Forest Service, Rocky Mountain Forest and Range Experiment Station, Fort Collins, CO.

East Face Response – *We were unable to access this paper online. It only appears as a citation within other articles.*

Kolb, Peter F. and Robberecht, Ronald, "Pinus Ponderosa Seedling Establishment and the Influence of Competition with the Bunchgrass Agropyron Spicatum" (1996). Forest Management Faculty Publications. Paper 28.

East Face Response – *This paper compares the effects of bunchgrass presence on tree seedling establishment. The comparison suggests that reduced vegetative competition*

results in higher densities of tree seedlings. The East Face project has relatively light stocking rates which should not reduce basal cover of bunchgrasses nor increase the survival of conifer seedlings.

Krueger, W.C. and A.H. Winward. 1974. Influence of cattle and big game grazing on understory structure of a Douglas fir-ponderosa pine-Kentucky bluegrass community. *Journal of Range Management* 27(6):450-453.

East Face Response – *This paper does not pertain to the East Face project as it focuses on lands primarily being managed for livestock grazing. The purpose and need for the East Face project is related primarily to managing fire behavior within the project area.*

Larson, M.M. and G.H. Schubert. 1969. Root competition between ponderosa pine seedlings and grass. General Technical Report RM-54. U.S. Forest Service, Rocky Mountain Forest and Range Experimental Station, Fort Collins, CO.

East Face Response – *This paper suggests that the presence of phytotoxins in some grasses may inhibit germination of tree seedlings. The comparison suggests that reduced vegetative competition results in higher densities of tree seedlings. The East Face project has relatively light stocking rates which should not reduce basal cover of bunchgrasses nor increase the survival of conifer seedlings.*

Laudenslayer, W.F., H.H. Darr, and S. Smith. 1989. Historical effects of forest management practices in eastside pine communities in northeastern California. Pages 26034 in A. Tecle, W.W.

East Face Response – *We were unable to access this paper online. It only appears as a citation within other articles.*

Lehmkuhl, J.F., P.F. Hessburg, R.L. Everett, M.H. Huff and R.D. Ottmar. 1994. Historical and current forest landscapes of eastern Oregon and Washington. Part1: Vegetation pattern and Insect disease hazards. General Technical Report PNW-GTR-328. U.S. Forest Service, Pacific Northwest Research Station. Portland, OR.

East Face Response – *The legacy effects of past management which have created the existing condition are described in the purpose and need for the East Face project. This project addresses treatments related primarily to managing fire behavior within the project area.*

Leninger, W.C., and S.H. Sharrow. 1989. Seasonal browsing of douglas-fir seedlings by sheep. *Western Journal of Applied Forestry*. 4(3):73-76.

East Face Response – *This paper does not pertain to the East Face project as it focuses on lands primarily being managed for livestock grazing. The purpose and need for the East Face project is related primarily to managing fire behavior within the project area.*

Leopold, A. 1924. Grass, brush, timber and fire in southern AZ. *Journal of Forestry* 22:1-10.

East Face Response – *This paper does not pertain to the East Face project as it focuses on the brush fields of southern Arizona in 1924 which is not represented in the current day landscape within the East Face project area.*

Mack, R.N. and J.N. Thompson. 1982. Evolution in steppe with few large, hooved mammals. *American Naturalist* 119(6):757-772.

East Face Response – *This paper does not pertain to the East Face project as it focuses on lands primarily being managed for livestock grazing. The purpose and need for the East Face project is related primarily to managing fire behavior within the project area.*

Madany, M.H. 1981. Land use-fire regime interacts with vegetation structure of several montane forest areas of Zion National Park. Thesis. Utah State University, Logan, Utah.

East Face Response – *This paper focused on the effects of historic high intensity grazing. The East Face project has relatively light stocking rates*

Madany, M.H. and N.E. West, 1983. Livestock Grazing-Fire Regime Interactions within Montane Forests of Zion National Park, Utah. *Ecology*, 64(4). pp 661-667.

East Face Response – *This paper focused on the effects of historic high intensity grazing. The East Face project has relatively light stocking rates*

Martin, J.W. and R.M. Turner. 1977. Vegetational change in the Sonoran Desert region, Arizona and Sonora. *Journal of the Arizona Academy of Sciences*.

East Face Response – *This paper is not relevant to this project because it focuses on the vegetation and ecosystems in the Sonoran desert. This does not match the vegetation and ecosystems present in the East Face project area.*

McPherson, G.R. and H.A. Wright. 1989. Effects of cattle grazing and Juniper canopy cover on herb cover and production in western Texas. *American Midland Naturalist* 123(1):144-151.

East Face Response – *This paper is not relevant to this project because it focuses on juniper vegetation in western Texas. This does not match the vegetation and ecosystems present in the East Face project area.*

Miller, R.F. and W.C. Krueger. 1976. Cattle use on summer foothill rangelands in northeastern Oregon. *Journal of Range Management* 29(5):367-371.

East Face Response – *This paper focuses predominantly on management of cattle and the interaction with wild ungulates. It does not discuss the relation to forest/fuels management activities and is therefore not relevant to the activities proposed in the East Face project.*

Mitchell, John E. and Duane R. Freeman. 1993. Wildlife-livestock-fire interactions on the North Kaibab: A Historical Review. General Technical Report RM-222. USDA Forest Service Rocky Mountain Forest and Range Experimental Station, Fort Collins, CO. 12p.

East Face Response – *We were unable to access this paper online. It only appears as a citation within other articles.*

Morgan, Penelope, 1994. Dynamics of Ponderosa and Jeffrey Pine Forests in Flammulated, Boreal and Great Gray Owls in the U.S. Forest Service General Technical Report RM-253, Rocky Mountain Forest and Range Experiment Station, Fort Collins, CO, USA

East Face Response – *This paper focuses on the effect of fire and other disturbance elements, primarily grazing, that influence alteration of ponderosa pine forest structure.*

The purpose and need for the East Face project is related primarily to managing fire behavior within the project area. Relatively light grazing occurs on approximately half of the project area.

Odion, D.C., E.J. Frost, J.R. Strittholt, H. Jiang, D.A. DellaSala and M.A. Moritz. 2004. Patterns of fire severity and forest conditions in the western Klamath Mountains, California. Conservation Biology 18(4): 927-936.

http://nature.berkeley.edu/moritzlab/docs/Odion_etal_2004.pdf

East Face Response – *This paper focuses on fire disturbance and the ecological value and uniqueness of fire effects due to seasonal differences in temperature and moisture; as well as species distribution patterns. We acknowledge that species distribution and abundance patterns change with temperature and moisture gradients and thus effect fire severity patterns. The concepts of fire dependent ecosystems were considered as part of this analysis.*

O'Laughlin, J., J.G. MacCracken, D.L. Adams, S.C. Bunting, K.A. Blatner, and C.E. Keegan. 1993. Forest health conditions in Idaho. Report Number 11. Idaho Forest, Wildlife and Range Policy Analysis Group, Moscow, Idaho.

East Face Response – *This is a report describing the health of forests in the State of Idaho in 1993. This article has no relevance to the current condition of the landscapes in the East Face project area.*

Painter, E.L. and A.J. Belsky. 1993. Application of herbivore-optimization theory to rangelands of the western United States. Ecological Applications 3:2-9.

East Face Response – *This paper discusses the resilience of the shortgrass steppe ecosystem and organisms, to past drought and grazing and their sensitivity to other types of change. The East Face project is a proposed fuels reduction project. Current livestock grazing is relatively light and the allotment covers only half of the proposed East Face project area boundary.*

Pearson, G. A. 1923. Natural reproduction of western yellow pine in the Southwest. U.S. Dept. Ag., Bull 1105. 143 pgs.

East Face Response – *This paper discusses the effects of prescribed burning as a thinning tool for increasing the probability of obtaining natural regeneration. The purpose and need for the East Face project is related primarily to managing fire behavior within the project area, through reduction of overstocked stands which would minimize competition for natural regeneration.*

Pearson, G.A. 1933. A twenty year record of changes in an Arizona pine forest. Ecology 14:272-285.

East Face Response – *The purpose and need for the East Face project is related primarily to managing fire behavior within the project area. Leaving adequate seed trees, elimination of fire, and grazing impacts were considered during project analysis.*

Peet, R.K. 1988. Forests of the Rocky Mountains. Pages 63-101 in M.G. Barbour and W.D. Billings, editors. North American terrestrial vegetation. Cambridge University Press. New York, New York.

East Face Response – *This paper discusses elevational zones and environmental gradients; and the importance of disturbance, succession and ecosystem development within major vegetation types. Fire models and fire regime analyses and assumptions used in the fire/fuels analyses completed for the East Face project were appropriate for the landscape, topography, and vegetation types found within this project area.*

Pieper, R.D. and R.D. Wittie. 1988. Fire effects in Southwestern Chaparral and pinyon-juniper vegetation. IN Management of Southwestern Natural Resources, USDA Forest Service.

East Face Response – *This paper describes periodic wildfire and fire suppression techniques in the Southwestern Chaparral and pinyon-juniper vegetation. The East Face project is comprised of mixed conifer stands primarily within cold and moist upland forest groups and does not include these vegetation types.*

Quigley, T.M., H.R. Sanderson, and A.R. Tiedemann, eds. 1989. Managing interior northwest rangelands: the Oregon range evaluation project. General Technical Report PNW-238. USDA Forest Service, Pacific Northwest Research Station, Portland, Oregon.

East Face Response – *This paper describes results of a study of the effects of range management strategies on a number of variables. The East Face project is a proposed fuels reduction project. Current livestock grazing is relatively light and the allotment covers only half of the proposed East Face project area boundary.*

Raymond, Crystal L. 2004. The Effects of Fuel Treatments on Fire Severity in a Mixed - Evergreen Forest of Southwestern Oregon. MS Thesis.
http://depts.washington.edu/nwfire/publication/Raymond_2004.pdf

East Face Response – *This paper examines management implications of fuel treatments and the need for fire hazard reduction treatments to simultaneously address multiple fuel strata in order to adequately reduce fire severity.*

The East Face project is a proposed fuels reduction project. Fire models and fire regime analyses and assumptions used were appropriate for the landscape, topography, and vegetation types found within this project area.

Raymond, Crystal L.; Peterson, David L. 2005. Fuel treatments alter the effects of wildfire in a mixed-evergreen forest, Oregon, USA. Canadian Journal of Forest Research. 35: 2981-2995

East Face Response – *This paper focuses on the relationship between fuels and fire severity within a mixed-evergreen forest with a mixed-severity fire regime.*

The East Face project is a proposed fuels reduction project. Fire models and fire regime analyses and assumptions used were appropriate for the landscape, topography, and vegetation types found within this project area.

Rasmussen, D.I.. 1941. Biotic communities of the Kaibab Plateau, Arizona. Ecological Monographs 11:229-275.

East Face Response – *This paper discusses grazing management as a factor in forest health problems. Current livestock grazing is relatively light within the allotment, which is located within only half of the proposed East Face project area boundary.*

Rietveld, W.J. 1975. Phytotoxic grass residues reduce germination and initial root growth of ponderosa pine. Forest Service Research Note RM-153, Rocky Mountain Forest and Range Experiment Station, Fort Collins, CO, USA

East Face Response – *This paper discusses the potential for extracts from the green foliage of Arizona fescue and mountain muhly to reduce the germination of ponderosa pine seeds and retard the speed of elongation and mean radicle length. Because these species are not present in the East Face project area, this research is not relevant to the East Face project.*

Roath, L. and W.C. Krueger. 1982. Cattle grazing and behavior on a forested range. Journal of Range Management 35(3):332-338.

East Face Response – *This paper does not pertain to the East Face project as it focuses on lands primarily being managed for livestock grazing. The purpose and need for the East Face project is related primarily to managing fire behavior within the project area.*

Roy, D.F. 1953 Effects of ground cover and class of planting stock on survival of transplants in the eastside pine type of California. California Forest and Range Experimental Station Forest Research Note No. 87. 6pp.

East Face Response – *We were unable to access this paper online. It only appears as a citation within other articles.*

Rummell, Robert S. 1951. Some Effects of Livestock Grazing on Ponderosa Pine Forest and Range in Central Washington. Ecology 32(4):594-607.

East Face Response – *This paper does not pertain to the East Face project as it focuses on lands primarily being managed for livestock grazing. The purpose and need for the East Face project is related primarily to managing fire behavior within the project area.*

Savage, M., and T.W. Swetnam. 1990. Early 19th century fire decline following sheep pasturing in a Navajo ponderosa pine forest. Ecology 32(4):594-607

East Face Response – *We agree that the pattern of ponderosa pine forests is significantly influenced by fire. The East Face project is related primarily to managing fire behavior within the project area.*

Schwan, H.E. 1949. Influence of grazing and mulch on forage growth. Journal of Range Management 2:142-148.

East Face Response – *This paper focuses on the effects of grazing on forage growth and removal, and on individual plants. The purpose and need for the East Face project is related primarily to managing fire behavior within the project area.*

Skovlin, J.M., R.W. Harris, G.S. Strickler, and G.A. Garrison. 1976. Effects of cattle grazing methods on ponderosa pine-bunchgrass range in Pacific Northwest. Technical Bulletin 1531, U.S. Forest Service, Pacific Northwest Research Station, Portland, Oregon.

East Face Response – *This paper does not pertain to the East Face project as it focuses on lands primarily being managed for livestock grazing. The purpose and need for the East Face project is related primarily to managing fire behavior within the project area.*

Smith, D.W. 1967. Effects of cattle grazing on a ponderosa pine-bunchgrass range in Colorado. Technical Bulletin 1371. U.S. Department of Agriculture, Washington, DC. Stebbins, G.L. 1981. Co-evolution of grasses and herbivores. *Annals of the Missouri Botanical Garden*. 68:75-86.

East Face Response – *This paper does not pertain to the East Face project as it focuses on lands primarily being managed for livestock grazing. The purpose and need for the East Face project is related primarily to managing fire behavior within the project area.*

Stebbins, G.L. 1981. Co-evolution of grasses and herbivores. *Annals of the Missouri Botanical Garden* 68:75-86.

East Face Response – *This paper focuses on the interaction of grazing and effects on forage. The purpose and need for the East Face project is related primarily to managing fire behavior within the project area.*

Stein, S.J. 1988. Explanations of the imbalanced age structure and scattered distribution of ponderosa pine within a high-elevation mixed coniferous forest. *Forest Ecology Management* 25:139-153.

East Face Response – *The purpose and need for the East Face project is related primarily to managing fire behavior within the project area. Ponderosa pine occurs within the dry, upland forested biophysical groups which make up less than 10 % of the project area.*

Tackie, D. and D.F. Roy. 1953. Site Preparation as related to ground cover density in natural regeneration of ponderosa pine. California Forest and Range Exp. Station Technical Paper No. 4. 13 pp.

East Face Response – *We were unable to access this paper online. It only appears as a citation within other articles.*

Tiedemann, A.R. and H.W. Berndt. 1972. Vegetation and soils of a 30-year elk and deer enclosure in central Washington. *Northwest Science* 46(1):59-66. Tisdale, E.W. 1950. Grazing of forest lands in interior British Columbia, *Journal of Forestry* 48:856-860

East Face Response – *This paper focuses on the effects of elk and deer grazing on the vegetation and soils. The East Face project is related primarily to managing fire behavior within the project area.*

Torell, Rimbey Ramirez, McCollum. 2004. "New faces and the changing value of rangeland." Pp. 57-86 In: Torell, L.A., N. Rimbey, L. Harris (eds.) *Current Issues in Rangeland Resource Economics*. Proceedings of a Symposium, Society of Range Management, Utah Agricultural Experiment Station, Research Report 190, College of Agriculture, Utah State University

East Face Response – *We were unable to access this paper online. It only appears as a citation within other articles.*

Tuomey, J.W. 1891. I. Notes of Some of the Range Grasses of Arizona. University of Arizona Agricultural Experiment Station Bulletin 2. United States Department of Agriculture (USDA) and the United States Department of the Interior (USDI). 1997. Assessment of Ecosystem Components in the Interior Columbia Basin and Portions of the Klamath and Great Basins. Volume IV, Chapter 6: An Economic

East Face Response – *This paper includes discussion of the key components of the ecological assessment process and sampling design and integration of diverse data sources. The project area was analyzed by an interdisciplinary team which considers a variety of information and data sources.*

Weaver, H. 1943. Fire as an Ecological and Silvicultural Factor in the Ponderosa Pine Region of the Pacific Slope J Forestry 41: 7-14

East Face Response – *The legacy effects of past management including fire suppression possibly much higher levels of livestock grazing which have created the existing condition are described in the purpose and need for the East Face project. This project addresses treatments related primarily to managing fire behavior within the project area at the current condition.*

Weaver, H. 1947. Fire - Nature's Thinning Agent in Ponderosa Pine Stands. J. Forestry 45: 437-444.

East Face Response – *The legacy effects of past management including fire suppression possibly much higher levels of livestock grazing which have created the existing condition are described in the purpose and need for the East Face project. This project addresses treatments related primarily to managing fire behavior within the project area at the current condition.*

Weaver, H. 1950. Shoals and Reefs in Ponderosa Pine Silviculture. J. Forestry 48: 21-22.

East Face Response – *This paper supports stand density management and was concerned about fire being removed from the landscape. The East Face project proposes stand density management as one of the tools to achieve reduced fuels and the reintroduction of fire to the landscape in a managed setting.*

Weaver, H. 1961. Ecological changes in the ponderosa pine forest of a cedar valley in southern Washington. Ecology 42:416-420.

East Face Response – *The legacy effects of past management including fire suppression possibly much higher levels of livestock grazing which have created the existing condition are described in the purpose and need for the East Face project. This project addresses treatments related primarily to managing fire behavior within the project area at the current condition.*

White, A.W. 1985. Presettlement regeneration patterns in ponderosa pine stands. Journal of Forestry 45:437-444.

East Face Response – *The concepts of fire dependent ecosystems was considered as part of this analysis.*

Winegar, H.H. 1977. Camp Creek channel fencing - plant, wildlife, soil, and water responses. *Rangeman's Journal* 4:10-12.

East Face Response – *We were unable to access this paper online. It only appears as a citation within other articles.*

Wooten, E.O. 1916. Carrying Capacity of Grazing Ranges in Southern Arizona. USDA Bulletin No. 367. Washington, D.C.: GPO.

East Face Response – *We were unable to access this paper online. It only appears as a citation within other articles.*

Wright, H.A. 1988. Role of fire in the management of Southwestern ecosystems. IN *Management of Southwestern Natural Resources*, USDA Forest Service.

East Face Response – *The concepts of fire dependent ecosystems was considered as part of this analysis.*

Wright, H.A. and A.W. Bailey. 1982. *Fire Ecology, United States and Southern Canada*. New York: John Wiley and Sons.

East Face Response – *The concepts of fire dependent ecosystems was considered as part of this analysis*

Wright, H.A., L.F. Neuenschwander, and C.M. Britton. 1979. The Role and Use of Fire in Sagebrush-grass and Pinyon-juniper Plant Communities: A state-of-the-art review. USDA Forest Service, Intermountain Forest and Range Experiment Station.

East Face Response – *The concepts of fire dependent ecosystems was considered as part of this analysis*

Zimmerman, G.T. and L.F. Neuenschwander. 1984. Livestock grazing influences on community structure, fire intensity, and fire frequency within the Douglas-fir/ninebark habitat type. *Journal of Range Management* 37(2):104-110.

East Face Response – *This paper focused on the effects of historic high intensity grazing. The East Face project has relatively light stocking rates*

LITERATURE ON THE VALUE OF SMALL ROADLESS AREAS

C.Loucks, N. Brown, A. Loucks, and K. Cesareo. 2003. USDA Forest Service roadless areas: potential biodiversity conservation reserves. *Conservation Ecology* 7 (2)

East Face Response – *This article describes the biodiversity values found in inventoried roadless areas on public lands. In the 2000 Roadless Area Conservation FEIS the Forest Service recognized the importance of unroaded areas for drinking water, recreation, privacy, seclusion, diversity of habitats for native plants and animal species, conservation of biological diversity, and opportunities for research, study and education. No inventoried roadless areas are located within the project area boundary.*

Crist, M.R., B. Wilmer, and G.H. Aplet. Assessing the value of roadless areas in a conservation reserve strategy: An analysis of biodiversity and landscape connectivity in the Northern Rockies, USA. *Journal of Applied Ecology* (2005) 42, 181–191

East Face Response – *This article describes the biodiversity values found in inventoried roadless areas on public lands in the Northern Rocky Mountain states. In the 2000 Roadless Area Conservation FEIS the Forest Service recognized the importance of unroaded areas for drinking water, recreation, privacy, seclusion, diversity of habitats for native plants and animal species, conservation of biological diversity, and opportunities for research, study and education. There are no inventoried roadless areas within the project area boundary. However, the effects of the East Face project on the undeveloped area near Bear Butte and threatened and endangers species within the area are described in the EA pages 140 to 146. The importance of this area for landscape connectivity between adjacent wilderness and inventoried roadless areas was identified in the EA and discussed in the response to HCPC comment HCPC15 above.*

DeVelle, R.L., and J.R. Martin. 2001. Assessing the extent to which roadless areas complement the conservation of biological diversity. *Ecological Applications* 11(4):1008-1018.

East Face Response – *This article describes the biodiversity values found in inventoried roadless areas on public lands. It is very similar to the Loucks, Brown, Cesario article above; therefore, the relevance and response would be the same.*

Juliane Schultze, Stefanie Gärtner, Jürgen Bauhus, Peter Meyer, Albert Reif, Criteria to evaluate the conservation value of strictly protected forest reserves in Central Europe, *Biodiversity and Conservation*, 2014.

East Face Response – *This article explores conservation of biodiversity in Central Europe using strictly protected forest reserves (SPFR) as a potential method for this. The 2000 Roadless Area Conservation FEIS the Forest Service recognized the importance of unroaded areas for biodiversity and enacted similar methods. No inventoried roadless areas are located within the project area boundary.*

Strittholt, J.R., and D.A. DellaSala. 2001. Importance of roadless areas in biodiversity conservation in forested ecosystems: a case study – Klamath-Siskiyou ecoregion, U.S.A. *Conservation Biology* 15(6):1742-1754.

East Face Response – *This case study describes the biodiversity values found on public lands in the Klamath-Siskiyou ecoregion. In the 2000 Roadless Area Conservation FEIS the Forest Service recognized the importance of unroaded areas for drinking water, recreation, privacy, seclusion, diversity of habitats for native plants and animal species, conservation of biological diversity, and opportunities for research, study and education. This follows through to the undeveloped area in the southwestern portion of the East Face project area north of Bear Butte. The effects of the East Face project on this area are described in the EA pages 140 to 146.*

J&C.Long (JCL) Comments

JCL1 - First, we would like to thank the Forest Service and BLM for taking on such a bold and vital project as the East Face Vegetation Management Project. Completion of this project will

mean a healthier, safer, and economically brighter future for Baker and Union Counties. This vegetation management project will mean reduced chances of catastrophic wildfires in the Elkhorns, protection of private property, enhanced public safety, and an economic boost to the counties and ultimately the Forest Service. This project also showcases how good management strategies can work to save threatened species such as the Whitebark Pine, which in turn saves our yearly snowpack.

Response - *Thank you for your support of the East Face Project.*

JCL2 - We're aware that the Forest Service has chosen Alternative 2 as their preferred alternative, but we would like you to consider the more ambitious Alternative 5. The added acreage of biomass removal will enhance the project and move our forest towards a healthier and more sustainable condition, while maintaining a variety of forest types for all who depend upon and enjoy our forests, both wildlife and humans.

Response – *Once a purpose and need is identified for a project area, a proposed action is developed to meet that purpose and need and used during the scoping process to identify issues and concerns with the proposed action around which additional alternatives are then developed to respond to those issues. Alternative 2 is the Proposed Action which was used during the public scoping period to identify issues and concerns for the East Face project (EA pages 9-18). These responding to these issues resulted in the development of three additional alternatives (Alternatives 3, 4, and 5). There is no preferred alternative at this point in the process based on the outcome of this comment period the decision maker will choose a preferred alternative based on the analysis of the effects of implementing each of the alternatives in the EA and the information/comments received during public involvement efforts and this public comment period.*

JCL3 - We also have a few reservations concerning this project. While protecting the wildland urban interface (WUI) at Anthony Lakes Ski Resort, why not clear some of the trees on the runs of the ski area itself? As ski pass holders on the mountain, we see the old photos that show the mountain as it once appeared, practically treeless! These historical photos could be used as a benchmark for what the mountain could look like again. Removal of some of the Subalpine Fir will reduce its' competition with the Whitebark Pine and open up the runs for those who ski and ride the mountain.

Response – *The Anthony Lakes Ski Resort is managed under a Special Use permit. Management of recreation activities and opportunities in the ski area is outside of the scope of this project and would need to be covered under a separate planning process focusing on ski area management. The permit holders/managers of the Anthony Lakes Ski Area have been coordinated with regarding activities in the East Face project and have not expressed any concerns or interest in changing the character of the recreation experience at the ski area.*

JCL4 - Next, the citizens of Baker County have repeatedly voiced their opinion against any further road closures, yet every alternative includes closing 38.5 miles of roads. Our question to the Forest Service, is this a wolf in sheep's clothing? Are you selling us a possible beneficial forest management project to cover up another attempt to close more roads?

Response – *The proposed action document for the East Face project was mailed to over 210 forest users, adjacent landowners, and concerned publics on January 15, 2015 which included a detailed description and maps of all proposed activities (including the*

post-sale road management plan) in the East Face project. These same documents were also posted on the forest website at the same time. A news release for the scoping period for the East Face project seeking public comment was issued on January 21st, 2015 which was published in several newspapers in northeast Oregon including The Observer, The Chamber Times, and the East Oregonian. Multiple presentations and approximately 5-6 public field trips have been given to the Wallowa Whitman Forest Collaborative which is a public group of more than 40 individuals and organizations working on large scale landscape projects including East Face. Presentations have also been made at the Small Woodlands Association. Refer to pages 7 and 8 in the East Face EA.

JCL5 - Lastly, while reviewing the list of preparers we noticed that there was not a geologist or minerals specialist on the team. While this is a vegetation project, there needs to be an analysis of the potential impacts to future mining operations.

Response: *When planning began on the East Face project in 2012 the South Zone Mining Specialist ran an LR2000 report from the BLM database which revealed there were no active mining claims within the project area. As a follow-up to the comments received during the comment period Wade Krist, South Zone Mining Specialist ran another report in November 2015. This report confirmed that there are still no active mining claims within the East Face project area. He also ran a report on the closed claims within the project area. Approximately 48 claims have been closed in the project area within the last 3 to 38 years (with the majority of them closing between 1986 and 1990), meaning they are not active and the claim as been closed. An analysis of the access to these claims was completed and the East Face project would not propose to change the existing access to any of these claims under Alternatives 2, 3, or 4; however, a very small amount of the motor vehicle access may be changed under Alternative 5 which proposes to promulgate motor vehicle access on currently closed roads which would be opened and reclosed. Should an operator come forward in the future with a Plan of Operations, access would be coordinated at that time and a road use permit provided for mining activities.*

L.Jacoby (LJ) Comments

LJ1 - I am asking you not to close any more roads. In first place it should have been brought before the people in Eastern Oregon whom it affects. What happened to representing the people?

Response - *The proposed action document for the East Face project was mailed to over 210 forest users, adjacent landowners, and concerned publics on January 15, 2015 which included a detailed description and maps of all proposed activities (including the post-sale road management plan) in the East Face project. These same documents were also posted on the forest website at the same time. A news release for the scoping period for the East Face project seeking public comment was issued on January 21st, 2015 which was published in several newspapers in northeast Oregon including The Observer, The Chamber Times, and the East Oregonian. Multiple presentations and approximately 5-6 public field trips have been given to the Wallowa Whitman Forest Collaborative which is a public group of more than 40 individuals and organizations working on large scale landscape projects including East Face. Presentations have also been made at the Small Woodlands Association. Refer to pages 7 and 8 in the East Face EA.*

Oregon Department of Fish & Wildlife (ODFW) Comments

ODFW1 - The Oregon Department of Fish and Wildlife (Department) would like to thank you for the opportunity to provide comments on the Proposed East Face Vegetation Management Project Environmental Assessment (East Face). The Department is very supportive of this project and the improvements/enhancements that it will provide. We appreciate the opportunity to collaborate with the USFS and our partners to implement cross-boundary habitat improvements and restore active forest management on ODFW's Elkhorn Wildlife Area.

Response: *Thank you for your support of the East Face project.*

ODFW2 - The Purpose and Need for the project identified the need to, "...help reduce ungulate impacts on agricultural lands and improve overall diversity and distribution of wildlife habitat." To effectively improve the distribution of elk on public land, the project must improve forage conditions and provide security habitat. The proposed action Alternative provides the improved forage conditions, but falls short of providing necessary security habitat to improve the distribution of elk.

The Department would like motorized access management addressed at the forest wide level as required by the National Travel Rule, however without a plan to accomplish this on the WWNF, it must be addressed at the project level. All roads that have been closed historically or grown in by vegetation should be physically barricaded, administratively closed by CFR, and motorized travel should be allowed only on open roads within the project area. In the absence of promulgation through CFR's, no benefits from "closing" these roads can be claimed.

Currently there are two seasonal Travel Management Areas (TMA's) - Clear Creek and Indian Creek-Gorham Butte- located with-in the East Face project boundary. Both of these TMA's were developed in the late-70's under a different hunting season structure than exists today. Specifically, archery deer and elk season and rifle deer season are high use periods that are excluded from existing closures. Current closure periods were designed primarily to reduce the potential for conflicts between users and to provide for bull elk escapement during rifle elk seasons. These periods are not adequate to influence elk distribution on the landscape. The Department recommends year-round closures periods or at a minimum that the language from Alternative 5 - "The closure periods for the Clear Creek and Indian-Gorham Cooperative Closure areas will be extended to include 3 days prior to archery season to the end of the second rifle bull elk season." - be incorporated into the selected Alternative. The additional closure dates will help the Department maintain deer and elk populations on public lands and reduce chronic big game damage on adjacent private lands.

Response: *The WWNF Forest Supervisor is the decision maker for the East Face project. Because the effects of extending the closure period of the two travel management areas and promulgating motor vehicle use on currently closed roads opened and reclosed for project use were analyzed in Alternative 5, the decision maker has the option to choose to incorporate these promulgations and closure period adjustments into his preferred alternative in the Decision Notice. The effects of these actions were analyzed in the EA on pages 146-153.*

ODFW3 - Alternative 2 (Proposed Action) identifies "Roads 7312100, 7312140, 7312400 - would remain open following project implementation because current road densities are well below Forest Plan standards in this area and these roads were identified as not creating any resource damage and currently being used by the public." The 7312100 and 7312140 roads are currently not usable

by passenger vehicles. Under the Proposed Action, these roads would be "opened" to create a loop road through an area that currently receives no motorized vehicle use. According to the new "Blue Mountains Elk Habitat/Nutrition Model," this area is considered an area of high predicted elk use. Therefore, this road system should remain closed to all motorized vehicles.

Response: *NEPA projects of recent past have shown that there is a public/social need for forest access. This road system is located in an area where Forest ORD guidelines are generally very low. It is located between to wildlife closure areas (Indian-Gorham and Clear Creek) which provide security areas for elk and other wildlife. Lengthening the closure period for these areas as proposed under Alternative 5 has the potential to increase security habitat. Roads 7312100, 7312140, 7312400 would only be left open if the 7312150 is closed and/or decommissioned. Through several reviews of resource specialists areas of concern, these roads were selected because they were located in an area of least concern. Maintaining these roads would decrease security habitat for elk, but road densities would remain below Forest Plan standards.*

ODFW4 - Current treatment designs have identified the primary areas for treatment as areas directly adjacent to open roads. In order to provide the greatest benefits to elk and other wildlife, the project needs to provide forage away from open roads. Forage enhancements away from open roads will be utilized by elk, whereas improved forage next to open roads will not be utilized. Open road densities and post project road management should be designed to encourage use by wildlife. Selection of Alternative 2 or 5 will accomplish improved forage conditions, but the final project action must include motorized access management suggestions listed previously in this letter for those improvements to be utilized by elk.

Response: *Refer to responses to ODFW2-4.*

ODFW6 - Bull trout populations within the project area are quite small - both in geographic extent and abundance. As a result, these populations are vulnerable to disturbance. ODFW recommends that no in-channel disturbance(s) occur within currently occupied bull trout habitat. This project potentially involves the installation, maintenance and removal of many road stream crossing culverts. Where construction or removal of artificial obstructions to fish passage occur, and native migratory fish are present or where historically present, Oregon's Fish Passage laws are triggered. USFS needs to obtain fish passage approval for activities that trigger Oregon's Fish Passage laws. Information regarding this process can be found at: <http://www.dfw.state.or.us/fish/passage/>.

Response: *The USFS will obtain ODFW approval for a passage plan for these four sites in East Face Vegetation Management Project where in-channel work may occur in streams where native migratory fish are present. There are 4 locations where in-channel work may occur in streams that have bull trout and redband rainbow trout.*

Activities associated with these crossings and in-channel work is analyzed in the EA pages 179, 180, 183, 184.

Wolf Creek Culvert Replacement

All alternatives propose replacing the culvert on road 431680 that crosses Wolf Creek. Wolf Creek is a Class I fishbearing stream with ESA listed bull trout and redband rainbow trout. The existing culvert is inadequate for fish passage. Culvert replacement would have overall beneficial effects to fish passage and improve access for fish to upstream habitat, however there would be a short term increase in sediment and turbidity during and after instream work associated with removing and installing the new culvert. The site would be dewatered

at the time of construction to decrease effects to fish and water quality during in-channel work. When the site is rewatered initially, sediment delivery may occur having short term effects on downstream fish and habitat. See discussion under water quality above regarding culvert installation and sediment. This culvert replacement would have an overall indirect beneficial effect to fish habitat and fish populations by improving passage to 5.2 miles of upstream habitat.

This culvert will be replaced during the instream work window July 1-August 31 specified in Oregon Guidelines for Timing of In-Water Work to Protect Fish and Wildlife Resources (2008) for Wolf Creek.

North Fork Anthony Creek Bridge Replacement

The 7312 road is a primary haul route for the East Face project area. Due to weight limitations which will not support log haul on the existing bridge on the 7312 road over North Fork Anthony Creek, the old bridge would be removed and a new bridge would be installed. Removal of the existing bridge and installation of the new bridge could have short term direct effects on fish habitat or populations if any equipment enters the channel or excavator work is necessary below ordinary high water to build slopes and abutments. North Fork Anthony Creek is a Class I fishbearing stream with ESA listed Bull Trout, redband and brook trout. Effects would be the same in Alternatives 2-5.

East Fork Indian Creek

In alternatives 2 and 5 temporary road T-26 would be used to access units 113 and 114. There is an existing log culvert on a Class I fishbearing stream with ESA listed bull trout. This log culvert would be removed and replaced with a temporary culvert that meets fish passage standards and this culvert would be removed after access to and haul from these units is complete. In-channel work associated with this Class I crossings would cause a short term increase in sediment and turbidity during and after instream work is complete. The site would be dewatered at the time of construction to decrease effects to fish and water quality during in-channel work. The second occurrence of instream disturbance at this location would occur when the temporary culvert is removed after project activities are complete. This in water work would be very short in duration and would remove the temporary culvert, restore width and grade of the channel and pull road fill back to appropriate slope.

This site would ultimately benefit under these alternatives from removing a dilapidated crossing on a fishbearing bull trout stream.

North Fork Anthony Creek Culvert Installation

A culvert on road 7312160 on a perennial Class III non-fish bearing stream was removed and would need to be installed in Alternatives 2 and 5 since both of those alternatives propose using that road. This culvert installation is less than .25 miles upstream of the extent of bull trout habitat. There could be indirect effects to bull trout downstream from the in-water work associated with installing a culvert at this location.

Oregon Wild (OW) Comments

OW1 - It is clear the Forest Service striving to minimize commercial activities in areas that are likely to stir up unnecessary controversy. Such considerations are welcome. They

provide a much better environment for working with stakeholders and for stakeholders to work with one another. We thank you for respecting the spirit and letter of the Roadless Rule, limiting treatments in RHCAs, honoring the 21" screens, not building new permanent roads, and considering scenic values around Hwy 73. In addition to our appreciation from a conservation perspective, proactively avoiding conflict in this manner is a pragmatic decision. It makes implementation of a successful project far more likely and minimizes strain on nascent relationships among stakeholders and the Forest Service.

Response: *Thank you for your support of the East Face project.*

OW2 - We understand some stakeholders would like to see the extraction of more, bigger trees. However we appreciate that the project designers recognized the constraints presented by this landscape. We always urge retention of the oldest and biggest trees. Mechanical treatments are not necessary in RHCA's on this landscape, there are not many large trees, the area is already heavily roaded. This *should* be a small log thinning project. To have broad support, we encourage the team to keep it that way. While we understand that some interests will always promote an increased focus on commercial activity and development on public lands, we appreciate and encourage the Forest Service to recognize non-commercial treatments as economic opportunity for the people and businesses doing the work.

Response: *The economic analysis completed for this project in the EA pages 122-127 describes potential economic investments/benefits from the commercial and non-commercial fuel reduction activities proposed in the East Face project area.*

OW3 - In at least one instance, the Forest Service is carrying treatments a significant distance across a road that serves as a WUI boundary. Given that a WUI delineation is itself a buffer (created through a provincial political process), providing more than a strategic fuel break along the road to buffer a buffer as proposed in some places seems redundant. Doing so further expands the impact of private development into our public forests. If such treatments have legitimate ecological justifications, we urge you to focus on those. A WUI bounded by a road can be "operationally defensible" by focusing on roadside treatments on the non-WUI side of the road.

Response: *(reference EA pages 80-82 and Fire Behavior Appendix) Treatment placement and size are a function potential fire behavior. The effectiveness of a fuels treatment is dependent on its design characteristics (size, location and type of treatment) but also on the behavior of fires approaching it. Such behavior is strongly determined by fuel spatial pattern in the adjacent areas and any thinning beyond the fuel break will improve its effectiveness. Spotting distance from torching trees is also a major factor in determining the width of a DFPZ. Fire behavior modeling has shown that spotting distance over a ½ mile can be expected under large fire environmental conditions (reference Fire Behavior Appendix). Consequently, fuel treatments in adjacent lands would determine fuel break width and canopy alteration.*

Minimizing the potential for fire to spread into the WUI's is a goal of this project. Defensible Fuels Profile Zones (DFPZ) adjacent to the WUI boundaries provide treated areas that disrupt or alter fire progression and or enhance suppression opportunities. Creation of DFPZ's is proactive approach to affect fire behavior in anticipation of a future wildfire.

OW4 - We understand that other portions of the project are being funded from many sources both public and private including those with very specific requirements. We also understand this project is being integrated into other programs and projects. In some cases, it was determined that no NEPA was necessary (like state and private lands) and that in other cases (like BLM) a separate NEPA document is being formulated. How will the Forest Service consider cumulative effects of these treatments as well as expected conditions created by this other work? Was East Face considered in the analysis of those projects?

Response: *Activities on state and private lands are not within the East Face Vegetation Management Project area; however, they were considered in this analysis as a part of project design to meet cohesive wildfire strategy (CWS) goals and as present and reasonably foreseeable future actions for cumulative effects analyses (refer to Appendix D of the EA). The East Face Vegetation Management Project EA covers all Federal lands (USFS and BLM) within the project area boundary. BLM lands and resources have been incorporated into the analysis of each resource areas' inventory, surveys, and effects analyses. Only one EA is being developed for this area; however, two decision notices will be prepared, one for each agency decision maker to sign for the lands they are responsible for.*

Activities on private lands funded through the Joint Chief's Initiative are from funding through the Natural Resource Conservation Service (NRCS). It is our understanding that they completed a NEPA process for these activities; however, you would need to contact their office for information on that process. Oregon Department of Fish and Wildlife (ODFW) are responsible for the management of the Elkhorn Wildlife Area and you would need to contact the ODFW Grande Ronde Watershed District Manager to discuss their process.

OW5 - To what extent is the Forest Service portion of the project constrained by funding and/or other projects/initiatives that it is attempting to harmonize with? To what extent is the Forest Service compelled to do certain things to make the overall project work? The FS should strive to be transparent about these considerations.

Response: *Forest Service funding information for this project is discussed in the EA on page 126 where it describes the average funding levels for this type of work on the Wallowa-Whitman National Forest and the likely need for additional funding support to complete all of the activities in the East Face project. There are no constraints or requirements placed on Federal activities from the other projects/initiatives. The Forest Service and BLM must comply with Forest and Resource Management Plans and handbook/manual direction.*

OW6 - Please make efforts to protect willow and alder and aspen where it occurs.

Response: *Aspen enhancement work proposed in this project is described on page 25 of the EA. Willow and alder are generally associated with riparian areas which will be adequately protected by the no activity buffers described in the EA on pages 24 and 48.*

OW7 - We ought not to try to solve a problem that doesn't exist. Where regeneration harvests are based on fire regime maybe we should just let fire do the work. We also have

concerns that regen harvest does not mimic natural processes. Much more dead wood structure should be retained.

Response: *The fuels reduction treatments in mixed and high severity fire regimes are designed to create and maintain DFPZ's which "compartmentalize" the project area and reduce the potential size of a wildfire, not to mimic natural processes.*

OW8 - Have there been full botanical surveys? What will be the effects of increasing elk use of these areas?

Response: *Yes, full botanical surveys within the appropriate habitat during the correct time have been completed on USFS lands for the plant species of concern. Botanical surveys on BLM lands are to be completed prior to project implementation to ensure avoidance of any occupied habitat during project layout and design.*

The potential for increased elk use and related impacts of the areas surveyed for species of concern is unlikely because no project activities will occur within the habitat for most of the species of concern; therefore, elk use should remain the same.

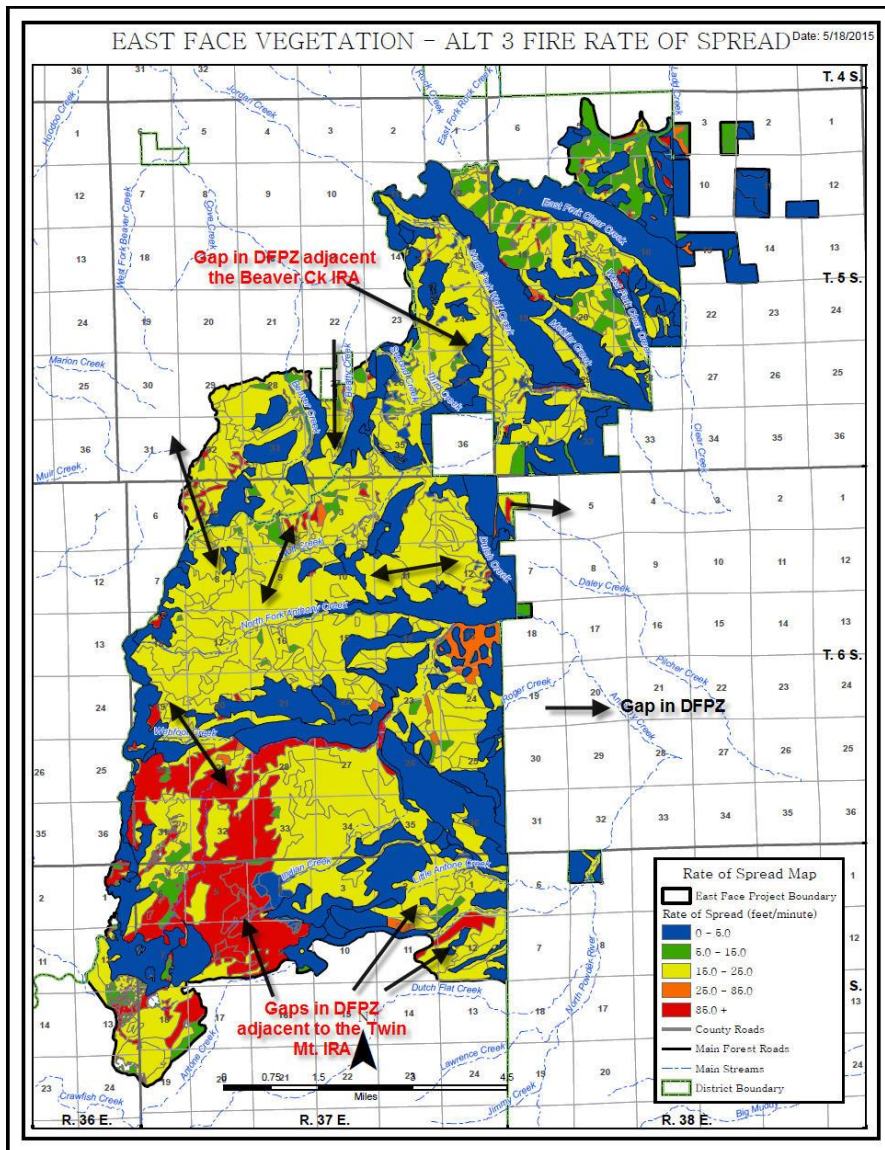
OW9 - While we appreciate that the Forest Service is honoring the Roadless Rule, we hope roadless areas won't become islands of habitat in a sea of aggressive management that go right to their edge. Consider feathering treatments rather than logging the entire perimeter of the roadless areas.

This project involves 800 of acres of treatment in the backcountry land allocation. The maps appear to show most of this is non-commercial treatment, which we can support if it is conservatively designed and carefully implemented. The LRMP urges the FS to "[d]evelop a program to treat natural fuels buildup with prescribed fire" and "emphasize[s] use of hand tools rather than heavy equipment" during fire suppression. If heavy equipment is discouraged during emergency situations like fire suppression, one would also expect that heavy equipment would be discouraged for non-emergency activities like fuel management.

Response: *With the exception of units 138 and 139 (32 acres) in Alternatives 2 and 5, the remaining treatments proposed in MA 6 are non-commercial fuel reduction work to be accomplished by hand; therefore, it appears the proposed treatments would meet the recommendations put forth in your comment.*

OW10 - We urge the FS to carefully reconsider its options on the commercial treatments in MA6 southeast and southwest of Bear Butte. We are concerned that those commercial treatments are potentially incompatible with the Backcountry Land Use Allocation. The LRMP (p 4-69) says "these areas are to remain relatively natural and undeveloped." Timber harvest is allowed, but only for limited purposes that do not appear to apply here, e.g., to improve recreation and scenery. Science no longer supports the notion that logging can "prevent spread insects onto adjacent lands." The LRMP does not provide any authority to build roads for logging. This may also extend to reopening the closed road in MA6.

WUI fuel treatments in MA6 Backcountry Recreation should focus on areas within the **structure ignition zone** and should be limited to non-commercial removal of trees <12" dbh.



Response: The closed road to be opened and reclosed in this area is a maintenance level one road that would remain on the landscape even under Alternative 1. The commercial treatments in units 138 and 139 are strictly to reduce existing high fuel loadings in those areas focusing on the smaller understory trees and currently high down fuel loadings. The goals for treating these stands is to provide an area along a strategically located road within an area that is adjacent to a large inventoried roadless area, the Floodwater Flats recreation residence area and the Anthony Lakes recreation area.

Alternative 3 does not treat many of the stands within the MA6 portion of the project area and creates the potential increased fire rates of spread as shown in the map above which would

put most of the remaining unroaded lands within this area at risk in the event of a wildfire in this area.

Fuel reduction treatments in this area would be designed to enhance recreation and scenery values.

OW11 - The snag retention guidelines described in the EA for both USFS and BLM lands are outdated and inadequate. New information indicates that more snags are needed to meet a wider variety of life needs of snag associated wildlife, and more green trees are needed to ensure continuous recruitment of those larger snag numbers. This is one of the main reasons we support conservative treatments that retain significant basal area and allow natural processes to continue to operate on these ecosystems. See Rose, C.L., Marcot, B.G., Mellen, T.K., Ohmann, J.L., Waddell, K.L., Lindely, D.L., and B. Schrieber. 2001. Decaying Wood in Pacific Northwest Forests: Concepts and Tools for Habitat Management, Chapter 24 in Wildlife-Habitat Relationships in Oregon and Washington (Johnson, D. H. and T. A. O'Neil. OSU Press. 2001)

<http://web.archive.org/web/20060708035905/http://www.nwhi.org/inc/data/GISdata/docs/ch>

Response: *Snag retention guidelines outlined in the Forest Plan were determined to be inadequate for the needs of primary cavity excavators and were replaced by the Regional Forester's Plan Amendment #2 (Eastside SCREENS) which incorporated more recent research. In addition to following the guidelines laid out in the SCREENS, integration of the latest science is incorporate into the analysis using the DecAID Advisor Version 2.2 (Mellen-McLean et al. 2012) which is an internet-based meta-analysis of the best available science: published scientific literature, research data, wildlife databases, forest inventory databases, and expert judgement and experience. This represents some of the best available data showing distribution and variation in snag amounts across the landscape. FS Veg analysis is used to examine snag retention based on treatment to ensure snag levels will not drop below Forest Plan standards. For a full discussion of these analyses refer to the EA (page 194-198).*

OW12 - Though it takes up a very small portion of our comment, we want to be clear that we have tremendous appreciation for the FS for giving consideration to conserving whitebark pine. This is the sort of consideration that gives credibility to the notion that projects are truly restorative in nature. We would urge approaching these areas with as light a touch as possible. Whitebark Pines exist in fragile ecosystems that are under stress. Wherever possible we urge work by hand crews.

Response: *As described in the EA on pages 18 and 26 "treatment within these units will be by hand only" for Whitebark Pine Restoration.*

OW13 - We appreciate that collaborative goals were included in the projects Purpose & Need and that the collaborative was consulted in generating them. That provides a good opportunity to try something new. And while we also appreciate that this project was brought to the collaborative we're not sure that it's rightly called a "collaborative project" in the sense that many others are or in which the term is often understood. While there is value to the Forest Service participating in and hearing conversations between stakeholders in the meeting room and in the field, it seems much of the proposal was pre-determined before it made its way to the group. The project is also being guided by the Two Chief's Strategy, the Cohesive Wildfire Strategy, the Elk Initiative, and other efforts including other projects. In fact, as we understand it, parts of the project on "the other side of the line" are already underway and in some cases extremely aggressive. Significant funding may have come with strings attached. To be clear, this is not a rejection of collaborative involvement, but it is important that the Forest Service and the Collaborative be honest about what this project is and what it is not. We do hope that participating with the Collaborative in good faith will lead to a project we can all celebrate!

Response: *We continue to learn together along with collaborative participants on how to use the collaborative process in a manner that builds trust and ownership, and provides an opportunity for mutual learning. East Face represents an incremental movement towards building a "collaborative project" and included full collaborative participation in developing the purpose and need and numerous field and office meetings sharing information and concerns about the East Face project. Given that part of the Joint Chiefs Landscape Initiative is to fulfill the goals of the Cohesive Wildfire Strategy (CWS), a portion of the purpose and need goals could have been considered "pre-determined" as there is the intent to meet the*

three goals of the CWS:

- *Restore and maintain landscapes*
- *Create fire-adapted communities*
- *Improve fire response*

These goals are mirrored in the purpose and need developed by the Wallowa Whitman Forest Collaborative group for this project and are reflected in the proposed alternatives developed to meet that purpose and need. Every effort was made to engage the collaborative membership as they requested resulting in numerous updates, presentations, field trips, and group discussions over the past 3 years.

OW14 - While we believe it was an honest mistake, the area includes a great deal more moist forest than the collaborative was led to believe when the area was initially adopted as a subject of collaboration.

Response: *You are correct that initial vegetation information indicated more dry forest vegetation across the planning area than actually exists. Initial GIS queries run on this project area during early program of work discussions did indicate that there may be more dry forest vegetation types within the project area. As La Grande Ranger District began planning for this project and was able to spend some time on the ground verifying these queries, the initial estimates for dry forest PVGs were adjusted and this information carried forward throughout the planning process. This updated information was shared with the collaborative group during an introductory East Face presentation to the collaborative group in March 2013 indicating that dry forests occupy an estimated 22% of the area with moist forests accounting for 42% and cold forests 36% of the area.*

OW15 - Complex, dense stands, and those that include patches of abundant downed woody debris provide important habitat for several important wildlife species. We urge consideration of keeping adequate cover of this type to allow for maintenance and recovery of species such as marten, goshawk, lynx, pileated woodpecker, and others, as well as their prey.

Where stand replacing fire is typical, we hope that managing for “resilience” does not mean imposing an unnatural low-severity fire regime (except in the immediate vicinity of structures). Wildlife in these forest types evolved with high fuel loads and occasional stand replacing fire. Altering the natural pattern of forest vegetation (high canopy cover, abundant patches of snags and dead wood) and fire regimes will make wildlife populations less resilient, not more resilient.

Response: *The project area was analyzed at a watershed level to identify areas of landscape connectivity that could provide breeding habitat and movement areas for old growth dependent species (EA page 100-101). These areas contain the majority of OFMS and MA-15 within the project area. These areas were built into the project design and none of the proposed treatments fragment these identified corridors. Proposed treatments along the edges of denser, multi-storied stands focus on drier, south facing slopes that typically would have a more frequent, low-severity regime than the dense stands. By moving these stands toward historical conditions we reduce the risk of stand replacing fires in inappropriate places and protect areas valuable to old-growth species, allowing the stands to develop high canopy cover and function as important habitat.*

OW16 - Overgrazing by wild and domestic ungulates is a serious problem and while we don't wish to see damage to agricultural lands, public lands should not bear too much of the burden of providing alternative forage to wildlife because nearby non-federal lands that once provided important habitat for big game, have been converted to other purposes. That's especially true when agriculture – through domestic grazing is having such a profound impact on the forest. Has the Forest Service considered the unintended consequences of trying to lure elk to places they may not be heavily frequenting? The forest is not and should not be an elk farm.

Shifting elk from eating hay and wheat on private lands to instead eating native plants on public lands may be good for the agricultural industry. However, it's reasonable to question if that's the appropriate use of public lands (that are also utilized by industry). Are we further helping private agricultural interests at the expense of public values on public lands? Is that appropriate?

Response: *A historic range of variation analysis within the project watersheds shows that there is an overabundance of understory reinitiation structural stage, characterized by small dense understory trees, and a deficit in stand initiation structural stage, which would be characterized by low canopy cover and multiple grass, forbs and shrubs (EA page 6). This is echoed in the Habitat Effectiveness Index model that was run for elk which found the existing Cover:Forage ratio to be 71:29, with an optimal ratio of 40:60 (EA page 148). These findings indicate a large departure in the amount of forage that was historically present and the current amount and distribution. By creating more forage opportunities, we hope to affect the distribution of ungulate grazing and reduce potential heavy impacts that can result from large numbers of animals utilizing limited forage areas.*

OW 17 - Has the Forest Service filled in major data gaps from the Northwest elbow of the project area when it comes to elk cover/forage? If not, what assumptions are being made.

Response: *A coarse scale elk habitat selection model is currently under development by the Pacific Northwest Research Station (<http://www.fs.fed.us/pnw/research/elk/bluemtns/index.shtml>). This model uses mean slope, distance to roads, vegetation classes and a dietary digestible energy (DDE) variable to estimate elk habitat selection. The DDE variable was developed using research conducted by John and Rachel Cook. This model was run using existing conditions to help identify areas of medium-high use that would benefit from an increase in forage, particularly in summer range (EA page 151).*

Cook, J.G., Johnson, B.K., Cook, R.C., Riggs, R.A., Delcurto, T., Bryant, L.D., Irwin, L.L. 2004. Effects of summer-autumn nutrition and parturition date on reproduction and survival of elk. Wildlife Monographs, 155: 1-61.

Cook, R.C., Murray, D.L., Cook, J.G., Zager, P., Monfort, S.L. 2001. Nutritional influences on breeding dynamics in elk. Canadian Journal of Zoology, 79:845-853.

OW18 - The FS appears not to be addressing significant fish passage barriers (culverts & antiquated irrigation diversions) because they it may increase the chance of bull/brook trout hybridization. That may be a wise consideration, but we urge consideration of modernizing irrigation diversions that would not harm bull trout. Going beyond vegetative treatments

helps build broad support for projects like this and the unique nature of this project may provide a rare opportunity. If so, we urge the Forest Service to take it.

Response: *We agree that this needs to be done; however, this type of work is outside the scope of the East Face project and would require more project specific analysis and extensive coordination with ODFW and the US Fish and Wildlife Service. We hope they bring this forward as a project proposal for the future. Two fish passage improvements included in the Environmental Assessment for East Face project are described below:*

(Culvert removal and replacements described in EA pages 178, 179, 183).

Wolf Creek Culvert Replacement

All alternatives in the East Face project include Wolf Creek culvert replacement on road 431680. Wolf Creek is a Class I fishbearing stream with ESA listed bull trout and redband rainbow trout. The existing culvert is inadequate for fish passage. Culvert replacement would have beneficial effects to fish passage and improve access for fish to upstream habitat.....This culvert replacement would have an overall indirect beneficial effect to fish habitat and fish populations by improving passage to 5.2 miles of upstream habitat.

East Fork Indian Creek

In alternatives 2 and 5 temporary road T-26 would be used to access units 113 and 114. There is an existing dilapidated log culvert on a Class I fishbearing stream with ESA listed bull trout. This log culvert would be removed and replaced with a temporary culvert that meets fish passage standards and this culvert would be removed after access to and haul from these units is complete.

This site would ultimately benefit under these alternatives from removing a dilapidated crossing on a fishbearing bull trout stream.

OW19 - This project takes place in a wildlife corridor of continental importance. Please consider corridors on all scales. To the extent you have done so, we applaud you – especially where you incorporated real data (telemetry, surveys, remote cameras). However it also reinforces the need for more active monitoring across the landscape.

Response: *Landscape connectivity was taken into account at two scales. The LRMP requires that all identified old growth and designated MA-15 areas be connected in two directions with a minimum 400ft wide corridor that is maintained in the upper 1/3 of its site potential. In addition, watershed connectivity was analyzed using identified old-growth source habitat and landscape features. See the EA page 100-101 for more information on the analysis. Historical data was valuable in this process and highlights the need for continued research within our National forests.*

OW20 - A lot of the commercial harvest is located in moist-mixed forests. The EA says almost 80% of the forest types in this project area support mixed and high-severity stand-replacing fire regimes. What does “departure from historic fire return interval” mean in these forest types? Where fires are relatively infrequent or highly variable, departure from historic fire patterns is probably minor and not a big concern. Landscape modification from logging and roads is probably more significant than changes caused by partial fire exclusion. These

forest types are relatively insensitive to increased fuel loads. Fire tends to be more controlled by weather, climate, and topography. Therefore, focus fuel treatments on the structure ignition zone.

Response: *The principles that guide the fuels reduction treatments come from the Cohesive Wildfire Strategy (EA page 1). The intent of the mixed and high severity fire regime treatments is to create and maintain strategically located fuel reduction areas (DFPZ's). Departure from "historic fire return interval" was not identified as a reason for treatment in high severity fire regimes. The fuels reduction treatments in mixed and high severity fire regimes are based on the need to reduce existing fuel loadings and the associated fire behavior to desired conditions (reference EA pages 73, 80-82 and Fire Behavior Appendix).*

OW21 - We were troubled by aggressive thinning in lodgepole to address "catastrophic fire." Logging in lodgepole does not mimic any natural process. Logging in lodgepole tends to stimulate dense reprod which creates even more hazardous fuel conditions.

It appears the real reason for lodgepole treatment – and appeal to other stakeholders – is to recover economic value. Especially with all the public money being put into this project we would urge the Forest Service to be cautious about doing something ecologically wrong in one place to justify doing something ecologically right in another. While a strategic fuel break to protect a drinking watershed may make sense, trying to fireproof the area is a misguided, dangerous, and impossible mission.

Response: *We recognize that fire is a natural part of the forces that shape a landscape and the intent of this project has never been to "fireproof" it. The strategically located fuel reduction areas were designed to "compartmentalize" the project area and provide for smaller blocks of the area within which fire managers could safely fight and manage fires from to hopefully reduce the potential size of a wildfire on the landscape, not eliminate it.*

OW22 - For many years, we misunderstood the role of fire. It seems we may be making a similar mistake with respect to insects, disease, and other natural process. Has the Forest Service constructed a historical bug/disease model as we have with fire? Keep in mind that under the historic regime, every tree that grew in the forest died in the forest and stayed in the forest. Over large scales of space and time, forest growth and mortality were in balance (or at least pseudo-equilibrium). That puts the "problem" of forest mortality into perspective.

Response: *We are not aware of any historical bug/disease models having been constructed. Two forest entomologists and a plant pathologist visited the East Face area with the project silviculturist to investigate insect and disease issues in the project area and provide the team with treatment recommendations. In general, the District received the following recommendations from these research specialists:*

- *On all sites with dwarf mistletoe, stands should be managed to prevent the proliferation of dwarf mistletoe, with species or stand structure manipulations.*
- *Most moist upland sites should be managed to restore them to early seral species dominance and to promote the continued establishment of early seral species. This will mean reduced tree densities that will also increase resilience to drought, defoliators and fire.*

- *Where grand fir will be managed into the future, stump treatments are recommended. Where subalpine fir is desired in the future, light thinnings may increase resistance to BWA where blowdown is not a major concern.*
- *Lodgepole pine stands can be managed by lowering densities to reduce their susceptibility to beetles, where blowdown is not a concern.*
- *Where Armillaria root disease is causing mortality, species manipulation, natural regeneration, and avoiding soil disturbance are important.*

These recommendations were incorporated into project design and treatment prescriptions. Their report is located in the East Face Analysis File.

OW23 - Fuel treatment priorities and goals are not well articulated. Prioritizing treatment in the WUI out to 1.5 miles of private land boundaries does not provide enough focus for limited funds. Science is quite clear that protecting communities requires treatments focused within at most a few hundred feet of combustible structures. Treatments outside of that distance do little or nothing to protect the structure but they do increase costs and create potentially significant trade-offs in terms of water quality, carbon storage, wildlife habitat, weeds, recreation, and scenic values.

It is not clear if the Forest Service's Priority list is tiered (which is to say Priority 1 is the first priority above Priority 2 and so forth) or if they are simply *different* priorities (all co-equal). We – and at least some others - have been operating under former assumption. We urge the Forest Service to clarify and consider being more clear in future projects.

Response: *Refer to response to Comment BC4.*

The East Face project has been divided into the following 3 areas based on their proximity to private property, values at risk from wildfire, and/or logical locations for suppression operations (reference page 20 of the EA). Within these areas, a series of strategically located defensible fuel profile zones or DFPZ (reference EA pages 80-82) would be created. A combination of mechanical harvest and fuel reduction treatments designed to reduce crown fuels followed by surface fuel reduction treatments would occur within these DFPZs. Treatments in Priority Area 1 would complement treatments on Private and State lands where possible with a goal of creating a contiguous DFPZ along and across these boundaries using stand treatments and natural features. In the other areas, treatments would be on either side of roads where possible and incorporate existing natural fuel breaks and topography. Zone width would vary following stand types and needs recognizing areas where a more logical topographical or vegetative break or other resource/management need dictate a narrower or wider treatment area.

Priority One: *In this area treatment units were placed on the landscape due to the proximity of private land (generally within 1.5 miles) or within a WUI boundary, regardless of distance to a road system. Not every acre within 1.5 miles of the private boundary was proposed for treatment, only the stands which were determined to have a need were proposed for treatment. These treatments would be designed to prevent a wildfire from entering into the WUI's or private property. Treatments would be focused on:*

- *Creating a DFPZ along the boundary between public and private owned land.*
- *Creating a DFPZ adjacent to Twin Mountain Roadless Area along 73 road.*

- *Creating defensible space around the structures and improvements within the Anthony Lakes WUI.*

Priority Two: *Treatment units would be placed on the landscape in strategic areas adjacent to existing road systems. Units would be outside of the WUI and not adjacent to private property. The proposed treatments would be anchored into the existing road system and reinforced by natural barriers. These treatments would not be designed to stop a wildfire but provide suppression forces a higher probability of successfully managing a wildfire with indirect suppression tactics based off road systems. The strategically located treatments would compartmentalize the project area and reduce the potential size of a wildfire on the landscape, not eliminate it.*

Given the types of potential vegetation groups within this project area and their juxtaposition to private land interface areas, WUIs, and vast acres of inventoried roadless areas, fire managers are seeking to successfully utilize and manage fire on the landscape that are hundreds of acres in size instead of thousands of acres in size in order to not only create the heterogeneity desired but also to continue to provide recreation opportunities, habitat for endangered species, water for agricultural needs, and protect private lands and facilities.

- *Create DFPZ's along Forest Service roads 4380, 4350, 4315, 4320 7312*
- *The creation of a DFPZ along the 73 would increase opportunities for both planned and unplanned fire within the Twin Mountain Roadless.*
- *Compartmentalize the project area to limit the wildfire size.*

Priority Three *Treatment units would be placed on the landscape solely based on restoration or ecological need. Treatments would be outside the WUI, generally further than within 1.5 miles of private lands and not part of strategic fuels break. Treatments would be designed to manage vegetation for multiple purposes, including hazard fuels reduction and ecosystem restoration. The proposed treatments would:*

- *Reintroduce fire as disturbance mechanism and maintenance tool in dry forest types.*
- *Increase the abundance of fire tolerant tree species (western larch, Douglas fir and ponderosa pine) where appropriate.*

OW24 - Fire suppression is costly, dangerous, and often damaging. While we've appreciated some rhetorical explanations of how this project may set the landscape up for not suppressing every fire on every acre, we urge the Forest Service to make that clear in writing. We encourage the Forest Service to adopt a fire use plan so they can follow through of the opportunities created by projects like this.

Response: *"Wildland Fire Use Plans" under current forest plan direction are only appropriate in wilderness areas. There is no wilderness within the proposed project area. The strategically located fuel reduction areas were designed to "compartmentalize" the project area and reduce the potential size of a wildfire on the landscape, not eliminate it. Given the types of potential vegetation groups within this project area and their juxtaposition to private land interface areas, WUIs, and vast acres of inventoried roadless areas, fire managers are seeking to successfully utilize and manage fire on the landscape that are hundreds of acres in size instead of thousands of acres in size in order to not only create the heterogeneity desired but also to continue to provide recreation opportunities, habitat for endangered species, water for agricultural needs, and protect private lands and facilities.*

OW25 - We appreciate the Forest Service's desire to protect private property within and adjacent to the National Forest. However National Forests protect important values that are often diminished or absent on state, private, and BLM lands (in part driven by fear of and a desire to control natural processes). The Forest Service should not sacrifice important ecosystem values in order to protect private interests. Property owners also have a lot of things they can do to manage risk, mostly by managing fuels on their own property. We urge the Forest Service to do all it can to encourage and insist upon fire-safe measures on infrastructure. It is frustrating that we often have to log public lands to protect private interests on the other side of the line especially when risks are not being responsibly controlled on non-federal lands.

Response: *We understand your concern about the complicated role that federal agencies play regarding fire risk mitigation, especially when it comes to a perceived protection of non-federal lands or investments. The Floodwater Flats recreation residence tract, which is within the Anthony Lakes WUI, is considered a value at risk regardless of who owns the structures. We feel that responsible treatments within the WUI, combined with an ongoing commitment to educate and assist cabin owners with fire-safe practices within their lot boundaries, is the best way to ensure that future generations will enjoy the unique experiences afforded by the Anthony Lakes Recreation Area.*

OW26 - We would appreciate details on how the Forest Service wants to reduce surface fuels and provide details on how much downed woody debris will remain. It's important the Forest Service not try to be too aggressive and effectively *eliminate* down woody debris or reduce it in all places. What looks like fuel to a fire manager looks like habitat and cover to important wildlife.

Response: *Downed woody debris levels would be meet Forest and Resource Management Plan levels described in the EA on pages 23, 48, and 49. The intent of these levels is to meet the needs for wildlife soils site productivity resources.*

OW27 - Fire hazard is best managed by focusing on surface and ladder fuels. Canopy fuels are not the place to focus. Where canopy thinning will occur, the Forest Service may want to consider breaking up canopy continuity with variable, patchy treatments, rather than trying to uniformly reduce canopy density across the whole stand.

Response: *Fuel treatment strategies includes variable space thinning, removing ladder fuels (thin from below) and decreasing canopy density, followed by prescribed fire, piling and burning of fuels, or other mechanical treatments that reduce surface fuel amounts. This approach reduces canopy, ladder and surface fuels, thereby reducing both the intensity and size of potential wildfires (Graham, McCaffery and Jain. 2004. RMRS-GTR-120). The proposed commercial thinning treatments that reduce canopy bulk density (crown closure) would reduce the potential for crown fire development if surface fuels are concurrently treated (Cruz et al. 2002, Rothermel 1991, Scott and Reinhardt 2001, van Wagner 1977).*

"A surface fire may make the transition to some form of crown fire depending on the surface intensity and crown characteristics" (Van Wagner 1977 and 1993). Alternative 2 treatments reduce surface, ladder and crown fuels thus reducing potential fire behavior. The proposed thinning (thin from below) treatments would also maximize managing towards large fire resistant trees which create shade and decrease mid flame wind speed. Thinning treatments would be designed to leave the largest/healthiest trees on site to provide shading of surface fuels and partial

sheltering surface wind speeds (Fireline Handbook Appendix B Fire Behavior, 2006). Smaller diameter tree densities would be reduced to minimize the potential for crown fire initiation. This partially shaded gap between the surface and crown fuels would also minimize the potential for crown fire.

A reduction of surface and crown fuels reduces the potential for extreme fire behavior. Flame lengths would be reduced to intensities 4ft or less (Reference Fire Behavior Appendix) which allow firefighters to safely implement direct fire suppression tactics. Having the opportunity to utilize direct suppression tactics decreases the potential fire size, the risk to public and firefighter safety, the municipal watershed and private property. Reference EA pages 74-75 and 80-82.

OW28 - Opening stands too much (as some are asking) may help profit-driven economics, but it may also increase fire danger by creating more slash, by making the stand hotter, dryer, and windier, and by stimulating the growth of future ladder fuels.

Response: *The effects of opening stands and project created slash on fire behavior is described in detail for each action alternative in the EA pages 80-91. These effects are based on the residual stocking densities projected from the treatment prescriptions described in the EA on pages 21-22.*

OW29 - Where the Forest Service is proposing aggressive and controversial fuel breaks, perhaps it would be best to do it as part of a broader plan. These may be better considered as part of the coming Blue Mountain Forest Resiliency Project.

Response: *The Eastside Restoration Team has been coordinating with the East Face Interdisciplinary Team and will be incorporating the East Face project and other fuel reduction projects like it across the forest into their project design for the Blue Mountain Forest Resiliency Project.*

OW30 - Roads trump vegetation for elk security, habitat quality, and predicted use. Looking at maps of the project area, it's clearly difficult to get far from a road. If most treatments are near roads (as we'd encourage them to be) and the roads are the most important factor in elk security, are these treatments really helping elk if the roads are not subsequently closed or decommissioned?

Response: *Roads are one of the variables in elk habitat selection models, and there tends to be a trade-off between reducing habitat disturbance and fragmentation by avoiding building temporary roads, and increasing forage availability with treatments near existing roads. We used a draft elk habitat selection model (<http://www.fs.fed.us/pnw/research/elk/bluemtns/index.shtml>) that takes roads and nutrition into account to help identify areas that would most benefit from a decrease in canopy cover. This model helped identify areas that are expected to currently receive high elk use and are within summer range, an important nutritional time. Not all areas that experience an increase in forage species from the proposed treatments will be utilized equally by elk but can still be important for other species like sensitive invertebrates and birds.*

OW31 - The Forest Service will be replacing a bridge on the 7312 Road so it can handle log trucks. That may require additional NEPA.

Response: *The bridge replacement is a connected action (EA page 28) and has been analyzed in this EA.*

OW32 - There was a great deal of disagreement on what might happen to moist stands following thinning. If we are to make more informed decisions and to gain broad support in the future, it's important to learn from our experiments. Will thinning increase the health and vigor of moist stands with a brushy understory? Or will it be a waste of effort requiring perpetual aggressive management and increase fire risk? Would a closed canopy increase water retention and a decrease in ladder fuel?

There is a tremendous lack of understanding on the science of moist-mixed conifer forests and there is not broad agreement on the merits of various treatments. We urge a cautious and humble approach that recognizes these limitations. If the project is implemented, we urge a detailed, robust, and transparent monitoring plan also be implemented so all parties can make more informed decisions in the future.

Response: *We recognize there are varying levels of agreement and incomplete understanding of moist mixed conifer forest treatments. As such, proposed treatments of the moist mixed conifer forests reflect a thoughtful management approach that retains key forest components (large diameter trees, snags, green tree replacements) while promoting resiliency of the treated stand through retaining and promoting fire adapted species, reducing fuel ladders and managing stand structures to reduce fire behavior. These treatments are anticipated to increase the growth and vigor of the stand, as well as increase development of understory vegetation. We welcome the opportunity to work with the collaborative group to monitor moist-mixed conifer forest treatments as part of the overall multi-party monitoring efforts with a goal of increasing our mutual understanding of moist-mixed conifer stand management and informing future decisions.*

OW33 - We always urge the Forest Service to give equal consideration to the economic activity created by activities defined as non-commercial. To the extent that has been done here, we appreciate it.

We urge the Forest Service to consider economic considerations often overlooked such as ecosystem services and the project's impact on recreational opportunities.

Response: *The primary factors considered in the East Face economic analysis are related to job creation or maintenance, both direct and indirect, as a result of woods work activities expected and investments made related to forest restoration work, including both commercial and non-commercial activities. The intent of the analysis, as you have stated, includes both non-commercial activities and commercial timber harvest activities to evaluate potential jobs and economic effects related to them. Both recreation and ecosystem services, such as clean air or water, cannot be quantified in a similar manner as there are no specific work activities within the East Face Vegetation Management Project to which economic values for these services can be assigned to illustrate a difference between alternatives.*

OW34 - This project is being integrated with biomass projects. Is it to satisfy a market? Create one? Or is it a legitimate byproduct of activity? To what extent is it being subsidized? We urge the FS to avoid additional ground disturbance in order to encourage biomass extraction. The EA should fully describe the effects of multiple entries, extra

passes of heavy equipment on or off of skid trails, additional landing traffic and extra truck traffic. Is the FS relying on studies and assumptions that assumed lower ground impacts because biomass was not part of the project? If so, those analyses (and this NEPA document) need to be updated.

Response: *Incorporating biomass utilization into Alternative 5 was identified as a tool to meet the purpose and need in response to scoping comments for additional volume and as a result of discussions with biomass industry proponents who identified it as a potential byproduct of the fuel reduction activities proposed in the East Face project. These treatments are proposed only in typically non-commercial treatment units (HFU/PCT) in which material would be cut and removed as a product vs cut and left on site or burned.*

Biomass could provide for a wide range and variety of purposes such as densified fuels or pellets, combined heat and power, chips, firewood, and soil amendment products. These products could supplement the forest wood product industry within NE Oregon while minimizing competition for raw material currently in demand at established forest product sites.

Soil protection standards will remain the same regardless of treatment type or product removal.

OW35 - Has the Forest Service done:

- A botanical survey?
- Limiting function analysis?
- Analysis of species presence/use?
- Sufficiently addressed climate change?

Response: *Refer to response to comment OW8 on botanical surveys. Climate change is addressed in the EA on pages 4, 6, 19, 97-98, 130-131, 133, 136, 137, 191, 227, 240, 258-259.*

Presence/absence surveys for some MIS and sensitive species was conducted using audio callback transect surveys, remote camera surveys, and sweep net surveys. We assume by a limiting function analysis you are referring to a population viability analysis. Population viability was analyzed at the forest and watershed level for American marten, pileated woodpecker and Northern goshawk.

The analysis of species presence/absence for fish species has been completed as discussed below (from Existing Conditions page 2):

Region 6 classifies streams based on type of flow and presence or absence of fish. Class I streams are permanently or intermittently flowing and fish bearing, Class II streams are permanently or intermittently flowing and fish bearing with limited numbers of fish, Class III streams are permanently flowing and non-fish bearing, and Class IV streams are intermittently flowing and non-fish bearing. The Class II classification has been dropped, and any fishbearing stream is now identified as Class I. Stream class verification associated with project activities in the south half of the project area were verified in the field during the 2013 and 2014 field seasons. Stream class verification in the north half of the project area was initiated during the

2013 and 2014 field seasons, and will be completed during the 2015 field season

The Class I streams (fishbearing) or portions of Class I streams within the project area includes; Antone Creek, North Powder River, Anthony Creek, tributary to Upper Anthony Creek, Webfoot Creek, tributary to Webfoot Creek, North Fork Anthony Creek, Dutch Creek, Wolf Creek, North Fork Wolf Creek, Third Creek, East Fork Clear Creek, West Fork Clear Creek, Upper Beaver Creek, Upper Beaver Creek tributaries, Ladd Creek, and Shaw Creek.

Table 3 shows the results of fish habitat surveys for those streams that have had habitat surveys completed within the project area. This information was obtained from the Region 6 stream survey database and surveys are on file at the La Grande Ranger District. The majority of surveys within the analysis area were completed in 2013 and 2014. One survey, Upper Beaver Creek, was conducted in 1992. Survey information was collected utilizing the Hankin and Reeves methodology as modified by the PNW R6 Regional Office.

Table 3. Results of habitat surveys for fishbearing streams in the East Face project area.

Stream/Year Surveyed	Survey Length (miles)	Pools (#/mile)	Wetted Width (ft)	Stable Banks (%)	W/D Ratio	LWD (pcs/mi)
Antone Creek/2014	4.4	29	8.5	96.4	12.2	65
Anthony Creek/2014	6.9	25	14.6	100	23.6	5
Indian Creek/2014	2.4	47	5.0	100	5.7	49
North Fork Anthony Cr./2014	3.4	59	8.7	99.5	19.3	18
Dutch Creek/2014	1.5	123	4.8	98.2	17.7	17
Wolf Creek/2013	5.8	34	9.3	96	19.8	53
North Fork Wolf Cr./2013	0.8	51	6.9	100	13.5	74
East Fork Clear Creek/ 2014	3.7	95	6.5	95	23.3	47
West Fork Clear Creek/ 2013	1.8	106	4.2	97	13.0	29
Upper Beaver Cr./ 1992	4.3	20	6.1	ND	11.8	13

ND=No Data

In addition streamnet data (www.streamnet.org) is used to determine verified fish distribution in project area watersheds. Streamnet creates, maintains, and enhances high quality, regionally consistent data on fish and related aquatic resources that are directly applicable to regional policy, planning, management and research. Streamnet supports the collection, management and sharing of fish and aquatic habitat information in the Columbia River Basin.

Rocky Mountain Elk Foundation (RMEF) Comments

RMEF1 - The purpose of this letter is to state the Rocky Mountain Elk Foundation (RMEF) concurs with the USFS's statement of Purpose and Need for the East Face Vegetation Management Project (EA, p 16) and strongly supports selection of Alternative 5.

RMEF believes that Alternative 5 is the superior action alternative. Its superiority is demonstrated in the EA's side by side comparisons shown in Tables 23 and 24 (EA, p 69 and 71). Alternative 5 actively treats more acres than any of the other alternatives analyzed.

Response: *Thank you for your support of the East Face project.*

RMEF2 - RMEF is pleased to note big game habitat enhancement is recognized in the Purpose and Need statement (EA, p 16). Additionally, we believe the Wildlife – Big Game analysis, with elk as the management indicator species, was thoroughly done. RMEF requests all roads closed and/or de-commissioned in the course of the project be seeded to high forage value native species at the project's conclusion.

Response: *Seeding with native seeds within the East Face project is planned on all decommissioned roads, all temporary roads, and whole tree landing piles. We currently have 4 native grass species and 3 native forb species of high forage value on stock at the district which would be available for this use. Although used less frequently, there are numerous Shrubs with high value forage. In addition there are 5 native grass species and 1 forb/shrub of medium forage value currently on inventory. A number of these species, primarily forbs, are utilized by pollinators as well. Therefore, there will be an opportunity utilize these seed mixes for seeding work in the East Face project area.*

RMEF3 - Nowhere in the EA was there any reference to Presidential Executive Order 13443 - Facilitation of Hunting Heritage and Wildlife Conservation. Section 2 of the order has some specifics that should be addressed in the EA. We commend it to your attention in preparing the final EA document.

Response: *In order to meet the forage enhancement portion of the purpose and need for the East Face project, treatments (tree removal and prescribed burning) were designed to increase forage in high-value areas (areas capable of producing quality forage for elk and deer) to affect the distribution of elk across the project area and help mitigate impacts to neighboring private land. After collaborating with the Oregon Department of Fish and Wildlife, we are also proposing extending two seasonal closure areas within the project area under Alternative 5 to provide better security habitat during the hunting season. We believe these actions would help meet the intent of the Presidential Executive Order 13443 by working with the state to manage and conserve elk habitat as well as expanding and enhancing hunting opportunities for the public.*

Union County (UCo) Comments

UCo1 - Thank you for the opportunity to comment on the East Face Vegetation Management Project. I am pleased that this project is moving forward, the jobs that this project will bring and maintain in the area are valued.

I fully support working within the 1.5 mile buffer that is near private land. It is important to take into account the desires and objectives of the private landowners near the national forests. These landowners have different objectives that should be protected regardless of whether they have a structure on the property. I am concerned that without the appropriate management in the area, we will face another Grizzly Bear fire situation where fire will begin in the wilderness or inventoried roadless areas and build up to be unstoppable once it comes out of those areas. I support all the treatments necessary to reduce the fire danger to the private lands as well as opportunities

designed to box in the fire, these measures are important for the private entities and resources at risk in the project area.

Response - *Thank you for your support and involvement in the East Face project*

UCo2 - I do not support Alternative 3 or 4 because neither alternative will be effective in mitigating the fire danger in the area nor will it meet the purpose and need to reduce fire danger, provide the necessary big game habitat, or provide the necessary economic return for this project.

Response - *Alternatives 3 and 4 meet the purpose and need for this project, but as you point out in your comment, analysis in the EA shows that it would be at a lower level for some of the purpose and need elements than some of the other alternatives. These comparisons are important to display the effects of all actions in order for the Decision maker to be able to make an informed decision.*

UCo3 - This Project is also important to the county's economic health. Our Community counts on revenue coming from natural resource management work and the recreational opportunities in the project area. Hunting is extremely important and I believe that treatments in the Priority Area 3 are important for forage production to alleviate the damage that wild ungulates cause on private property in the area.

Please explain in further detail how the restoration in Priority Area 3 will contribute to the goal of habitat restoration and mitigate the damages to the private lands adjacent to the project area.

Response – *Priority area 3 stands are stands where a silvicultural need to treat the stand was identified during field reconnaissance; however, it was not located within a WUI, along the private land interface, or along strategic ridgetops and roads. The goals for these stands are to improve their health and vigor and promote forest structural and compositional conditions reflective of the historic ranges of variation (EA, page 20).*

Research has shown that forage is a high driver of elk distribution and that not all forage is created equal, with forest vegetation types containing intermediate canopy closure and wet meadows supporting the highest nutrition during the late summer, a time that plays a key role in elk survival (Cook et al. 1996). Opening stands in inappropriate nutritional areas will not influence elk distribution. The Pacific Northwest Research Station is currently developing a model that helps to identify areas of high elk selection, incorporating nutrition as one of the model variables (<http://www.fs.fed.us/pnw/research/elk/bluemtns/index.shtml>). This model was used in identifying areas that would have the highest influence on elk distribution (EA, page 151). The highest quality nutrition generally occurs in higher elevation areas with moist PVG. Balancing an interest in increasing forage with the purpose and need of restoring forest structure stages to HRV as well as feasibility of access and economics resulted in the conversion of cover to forage that is proposed. Additionally, elk distribution and retention of elk on public lands must also consider disturbance effects associated with access. Creation of forage/loss of cover without thoughtful management of access related disturbance is unlikely to benefit elk distribution and impacts to private lands.

Cook, J.G., L.L. Irwan, L.D. Bryant, R.A. Riggs, and J.W. Thomas. 1998. Relations of forest cover and condition of elk: a test of the thermal cover hypothesis on summer and winter. Wildlife Monographs 141: 1-61.

UCo4 - I'm particularly concerned about the average mbf per acre that the Forest Service has identified. This seems extremely low for the forest types as well as the needs of the local community. Producing only 2,500 board feet per acre is not economically feasible for tractor ground, let alone skyline and helicopter sites. I suggest that the Forest Service look for additional volume.

Boise Cascade, LLC currently employs over 600 people in Union County and approximately 100 people in Umatilla County. We've lost 24 forest contract companies and 357 family-wage jobs since 2005 in the Northeast Oregon 7- county Blue Mountain Region. The mills in the area are also running below capacity. I urge the Forest Service to work towards increasing the volume material removed in order to maintain the current infrastructure and jobs located in this region.

Response - *The East Face project area has been actively managed over the last 50-75 years and approximately 80% of the area has experienced large wildfires over the last 100 years reducing the availability of large trees across the landscape. Federal lands are managed for a multitude of uses/resources and users. Federal lands cannot be managed for a single resource. In order to meet Forest Plan and Resource Management Plan requirements for old forest, management indicator species, green tree recruitment levels, visual quality objectives, and connective corridors while still meeting project objectives specific levels of residual trees and design criteria must be retained and met. Due to the limited number of large trees across the landscape and Forest Plan requirements, options for removing additional sawlog volume are not available (see also Alternative B on page 19 of the EA). In response to public comments during scoping Alternative 5 was developed to treat additional acres and include biomass removal to optimize utilization options.*

UCo5 - Please discuss the economic analysis further, there was no discussion regarding how this project will supply the local infrastructure, what types of jobs will be created or maintained, and what it will do for local schools and county governments. Also, the economic analysis is based on the 1990 Forest Plan and there have been significant changes in demographics, infrastructure and social needs over the past 25 years. These changes are very important for understanding the needs of the local communities and the desire for more family- wage jobs as these jobs have been continually lost over the past 25 years.

Response - *Timber volume from the East Face Project Area would be available to support the supply needs of manufacturing infrastructure in place. Estimated volumes are shown in Table 51 on page 124 of the document. Also see Table 50 on page 123, which describes jobs related to Timber and Forest management, and how these jobs relate to the overall economies of the five-county area. This table reflects the snapshot in time for the year 2013, as the most recent available for the analysis.*

The economic analysis compares alternatives in terms of investments for contracted work in terms of jobs in the woods, wages associated with those jobs and the total economic output to local economies. The jobs in the woods include those forest management jobs associated with timber harvest, roads, and fuels or cultural work. The analysis focused on contributions to local economies at this time, and not changes which have occurred overtime. It appears that what you are asking relates to the larger scale Forest Plan revision which is in progress. The East Face economic analysis is specific to the jobs in the woods and not all components of the economies of Northeast Oregon.

UCo6 - Climate Change should be a large factor in all projects. This Forest Service project does not adequately account for climate change. I am concerned that there will be too much vegetation on the landscape that will lead to a die-off due to lack of moisture. This has recently happened in California which has increased the risk hazardous trees, fire danger, and erosion due to lack of vegetation to keep the soil in the appropriate areas.

Response - *Climate change is addressed in the EA on pages 4, 6, 19, 97-98, 130-131, 133, 136, 137, 191, 227, 240, 258-259.*

UCo8 - Please explain what you intend to accomplish by decommissioning 38.5 miles of roads in the project area. I do not support this portion of the plan. I'm concerned that decommissioning these roads limits the public's access to our national forests and the Forest Service will lose future harvest options as well as fire management/suppression opportunities.

Response - *The interdisciplinary team involved in this project did a site specific roads analysis for all the roads in the project area and identified which roads would be needed for future management of forest resources and for firefighting access. Roads where a specific need for firefighting access was identified would be closed by gates to facilitate easy re-entry in case of need. Additional road access is proposed within the middle of the project area. Roads needed for future management of the project area were retained on the system and would be put into storage as Maintenance Level 1 routes. As described in the EA on pages 32, 36, 40, 44, and 45 roads recommended for decommissioning were either creating resource impacts or are duplicate access into areas already accessed by other roads. Many of these roads have grown in and all but 2 miles are currently closed.*

Public comment during the scoping for this project generally supported the post-sale road management plan expressing concern about the poor condition of the roads within the project area and the impacts they are having on big game security and their use of the area.

UCo9 - I find the emphasis on prescribed fire in the project area troubling. Please look at alternatives to completing this work through biomass removal or other non-smoke producing options. The Wallowa-Whitman has a significant backlog for prescribed burning and I'm concerned that the amount of prescribed burning will not be completed in a timely manner due to DEQ and EPA regulations.

Response – *Table 30 from the EA on page 77 identifies the following acres of prescribed fire treatments in East Face project area.*

Treatment	Alt 1	Alt 2	Alt 3	Alt 4	Alt 5
Jack Pot Burn	0	3,835	2,820	2,823	4,150
Site Prep Burn	0	127	0	26	127
Natural Fuels Burn	0	6,685	6,043	6,643	6,685
Grapple Pile Burn	0	5,425	3,615	6,540	2,309
Hand Pile Burn	0	2,102	3,090	4,099	3,929
Total	0	18,174	15,568	20,131	17,200

The majority of the prescribed burning proposed in the East Face Project will follow a mechanical fuels reduction treatment which reduces the potential for smoke intrusions into local communities. The areas proposed for prescribed burning without a proceeding fuels

treatment consist of mostly open stands with low surface and canopy fuel loadings.

The proposed burning would occur over a 5 -10 year period limiting the potential for air quality impacts. Prescribed burns would be planned so that factors such as wind direction and air mass stability would help limit the effects of smoke (e.g. smell, eye irritation) on local residents, campers, or the general public. In the evenings, the residual smoke would tend to follow the local wind patterns, and flow down slope into the Baker valley. Experience from several burns in the area has shown that the effects of this smoke can be minimized by controlling length and time of ignition and burning under favorable mixing conditions for smoke dispersion. Local residents would be contacted and appropriate safety signs and other methods would be used to warn motorists. Fire managers would select areas to be burned that optimize natural smoke dispersion and minimize local exposure to adverse smoke impacts.

UCo10 - It is important to create more Stand Initiation structure on the landscape; this type of habitat is lacking throughout the Blue Mountains and is having an effect on the animal population that utilizes these areas.

Response - *A historic range of variation analysis within the project watersheds shows that there is an overabundance of understory reinitiation structural stage, characterized by small dense understory trees, and a deficit in stand initiation structural stage, which would be characterized by low canopy cover and multiple grass, forbs and shrubs (Refer to the EA page 6). This is echoed in the Habitat Effectiveness Index model that was run for elk which found the existing Cover: Forage ratio to be 71:29, with an optimal ratio of 40:60 (Refer to the EA page 148). These findings indicate a large departure in the amount of forage that was historically present and the current amount and distribution. Refer to the EA, page 151 for an analysis of the cover conversions by action alternative. Refer also to response to comment number UCo3.*

UCo11 - In reading the NEPA, I'm concerned that the priority areas create a hierarchy with regards to the importance of treatments. I suggest clarifying that the objectives of each of the priority areas are equally important.

Response - *As described in the EA on pages 20-21, the priority treatment areas are "based on their proximity to private property, values at risk from wildfire, and/or logical locations for suppression operations." These areas are strictly focused on meeting the fire behavior portion of the purpose and need. The intent behind the development of these areas was to provide the Fire/Fuels Specialist a unit of measure to illustrate relative differences (Table 29 in the EA, page 77) for how each alternative meets the goals of the Cohesive Wildfire Strategy (CWS). CWS goals are (EA, page 71):*

- Restore and maintain landscapes so that all jurisdictions are resilient to fire related disturbances in accordance with management objectives.*
- Create fire-adapted communities so people and infrastructure can withstand a wildfire without loss of life or property.*
- Improve wildfire response so all jurisdictions participate in making and implementing safe, effective, efficient risk based wildfire management decisions.*

V.Naughton (VN) Comments

VN1 - I am pleased to see the proposed project, it is badly needed. I have been associated with many timber sales in the area in the past and have reviewed the East Face project several times on the ground. I support Alternative 5 as it does the most to provide wood products and reduce wildfire, insect and disease problems.

Response - *Thank you for your support of the East Face project.*

VN2 - It [Alternative 5] does not however in my opinion go far enough to accomplish the goals. It is unnecessarily costly to the taxpayer. More sawlog timber could be removed (6 to 8 M/acre rather than 2.4M) use more mechanical equipment for falling timber and brush treatment, don't decommission 38.6 miles of spurs at \$5000/mile, just block, waterbar and erosion seed. I could go on and on but essentially I feel the USFS should intensively manage the remaining 20 or 30% of National Forest still available for timber management.

Response - *The East Face project area has been actively managed over the last 50-75 years and approximately 80% of the area has experienced large wildfires over the last 100 years reducing the availability of large trees across the landscape. Federal lands are managed for a multitude of uses/resources and users. Federal lands cannot be managed for a single resource. In order to meet Forest Plan and Resource Management Plan requirements for old forest, management indicator species, green tree recruitment levels, visual quality objectives, and connective corridors while still meeting project objectives specific levels of residual trees and design criteria must be retained and met. Due to the limited number of large trees across the landscape and Forest Plan requirements, options for removing additional sawlog volume are not available (see also Alternative B on page 19 of the EA). In response to public comments during scoping Alternative 5 was developed to treat additional acres and include biomass removal to optimize utilization options.*

Use of mechanical equipment is an option for achieving project objectives throughout the entire project except in those areas where heavy equipment is not able to access due to steep slopes, sensitive soils, or resource protection requirements (RHCA's and whitebark pine treatments). Alternative D in the EA under Alternatives Considered but Eliminated from Detailed Consideration (EA, page 19) looked at changing helicopter systems to ground based timber removal systems; however, it proved to be more costly than helicopter yarding and more impactful to soils and visual resources.

Road decommissioning would not be accomplished under the timber sale and is therefore not part of the benefits/costs analyzed in the Economic section of the EA (pages 122-127). These roads are nearly all currently closed and have been identified as either contributing to water quality issues such as sediment and/or provide duplicate access to the same area. Decommissioning these roads would return them to resource production for the future.